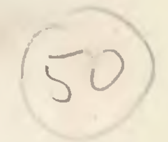
Repertorium specierum novarum
regni vegetabilis.
Herausgegeben von Professor Dr. phil. Friedrich Fedde.
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A REVISION OF SALVIA, SUBGENUS CALOSPHACE

by

CARL EPLING



With 33 Maps and 33 Plates

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To my wife,

Ruth Gilbert Persons

with deep affection and gratitude



Foreword.

The genus *Salvia* is the largest of the *Labiatae*, and while it is widely distributed throughout the world, the subgenus *Calosphace*, which forms the greater part of the genus, is wholly American. This subgenus is centered primarily in the highlands of Central Mexico and Central America with secondary areas of concentration in the northern Andes and the Brazilian highlands. Many of the species are highly localized and but few are extensive in distribution. One, *Salvia coccinea*, has become a tropical weed.

As might be expected of so large a group, the nomenclature has become involved. This is due to perhaps two reasons: the fact that the only complete review of the subgenus was made as long ago as 1833 (Bentham, G., *Labiatarum Genera et Species*; this was somewhat amplified in De Candolle's *Prodromus*, 1848); and the fact that, due to the scanty nature of the material available to him, Bentham's treatment could be no more than tentative. Since Bentham's time, the number of species described has approached nine hundred.

Bentham treated 158 species in *Calosphace*. These were grouped into seven rather vague and, as it appears to the author, arbitrary sections, most being assigned to two: *Brachyanthae*, comprising forms with mostly small blue flowers in which the corolla tube is not elongated and the lower lip of the corolla usually longer, and *Longiflorae*, comprising those forms with elongated tubular corollas, mostly red, and usually with the lower lip of the corolla shorter than the upper. Such an arrangement, as might be expected, could hardly serve for a genus so much expanded. Recent treatments by Briquet (Engler u. Prantl, Die natürlichen Pfl., ed. 1, IV, 3a, 277—284, 1897) and by Fernald (Proc. Am. Acad. 35. 489—556, 1900) have not materially renovated Bentham's system. However, these authors made significant contributions of new descriptions. In the generation since these papers appeared, new explorations have increased greatly the herbarium stores, not only of specimens illustrative of the older although often little known species, but also of many which are unnamed.

It is fortunate, perhaps, that the present author chanced to study the South American species before reviewing those of North America. For, by reason of the greater simplicity of the subgenus in South America, and its division into two geographical areas there, it was possible to arrive more easily at what seems to him to be the most suggestive bases for taxonomic arrangement. While these lie largely in the structure of the flower, particularly of the corolla and its included parts, nevertheless, correlations of vegetative habit and leaf form and pubescence as well as geographic distribution have appeared.

Briefly, these criteria are as follows: the number of flowers in a glomerule, the persistent or ephemeral nature of the floral bracts, the number of veins in the upper lip of the calyx, the proportion of upper lip of the corolla to the lower lip, the presence or absence of secretory appendages within the corolla tube, the entire or invaginated nature of the corolla tube, the inclusion or extrusion of the stamens from the upper lip, the attachment of the stamens with reference to the throat of the corolla, the nature of the stamen connective, particularly in its lower sterile portion, the proportions and shape of the style branches and the hairiness or smoothness of the style itself.

By applying these criteria it has been possible to divide the nearly five hundred species accepted in this paper into 91 species-groups or sections, as they are termed. A few of these exhibit two series, but for the most part, as it seems to the author, these sections represent natural groups of species which have characteristic and suggestive geographical distributions.

As a general rule these species-groups are localized in much the same manner as the species themselves. None are diffuse, although many may have representatives in both North and South America. These wider distributions are of three sorts: (1) a general Caribbean distribution, that is, in Central America or Southern Mexico and Northern South America (frequently in the islands as well), as for example, *Tubiflorae*, *Carneae* and *Purpureae*; (2) a range in Central Mexico and in the Brazilian Highlands but not in the intervening territory, as for example *Curtiflorae*, *Rudes* and *Farinaceae*; (3) a range in Central Mexico and the central Andes, as for example, *Chariantha*, *Tomentellae* and *Flocculosae*. Only the section *Angulatae* embraces all these areas.

As always, the author is deeply indebted to many colleagues and to these he wishes to make grateful acknowledgement. Without the generous and constant support of the Research Board of the University of California the work would have been impossible. He is particularly under obligations to the many officials of the following institutions as well as to the individuals named, all of whom have lent material aid: the University of California, the Royal Botanic Gardens at Kew, The British Museum, the U. S. National Herbarium, the Linnean Herbarium, the National Herbarium at Brussels, the New York Botanical Garden, the National Herbarium at Paris, the Principal Botanic Garden at Leningrad, the Herbarium of the University of Goettingen, the Botanical Institute at Berlin-Dahlem, the Botanical Institute at Munich, the National Herbarium at Vienna, the Philadelphia Academy of Natural Science, the Field Museum of Chicago, the Missouri Botanical Garden, the Gray Herbarium, the Arnold Arboretum, the California Academy of Sciences, the National Herbarium at Buenos Aires, the Delessert Herbarium at Geneva, the Boissier Herbarium at Geneva, the Herbarium of the University of Cambridge, the Herbarium of the University of Oxford, the National Herbarium at Stockholm, the Herbarium of Stanford University, the Herbarium of the University of Michigan, the Herbarium of the University of Texas, the National Herbarium at Copenhagen, the National Herbarium at Prag, the Rocky Mountain Herbarium, Dr. F. C. Hoehne of Sao Paulo, Dr. F. Herrera of Cuzco, Sr. Gualterio Looser of Santiago, Chile, Dr. Alberto Castellanos of Buenos Aires, Dr. A. L. Cabrera of La Plata, Mr. V. L. Cory of Sonora, Texas, Dr. A. Donat of Buenos Aires, Prof. W. G. Herter of Montevideo, Mrs. Ynes Mexia of Berkeley, Professor L. R. Parodi of La Plata, Professor Bento Pickel of Pernambuco and Sr. A. E. Ragonese of Buenos Aires. For assistance with the distribution maps the author is indebted to Mrs. Helen Whitten and Mr. A. L. Haines. He is greatly obliged to Miss E. L. Green for information regarding preoccupied names. For the drawings he must make grateful acknowledgment to Mr. Alexander Chudom. They were made largely from herbarium specimens and are designed to illustrate the characteristics of the sections, rather than to be diagnostic of the species concerned. The drawings of flower parts were made in wash from pencil drawings of the author. These are shown without pubes-

cence. The distributions of species as shown on the maps are by no means complete, for but few are adequately known; it is hoped rather to indicate fairly well the distributions of the sections and the relative distributions of the species within each section.

Salvia L.

Salvia L., Sp. Pl. 23. 1753 et Gen. Pl. ed. V, 15. 1754 per species plures constituta est: species normalis est *S. officinalis*.

Subgenus *Calosphace*.

Salvia sect. *Calosphace* Benth.[1]), Lab. Gen. et Sp. 198, 1833 per species numerosas constituta est; *S. coccineam* speciem normalem designo. — *Salvia* sect. *Microsphace* Benth., l. c., per species duas constituta est; *S. occidentalem* speciem normalem designo. — *Salvia* subgenus *Jungia* Briq. in Engler v. Prantl. Die Natürlichen Pflanzenf. IV, 3a, 277, 1897 per *Jungia* Moench constituta est. — *Calosphace* Raf., Fl. Tellur, 3, 91, 1836.

Plantae habitu polymorphae nunc herbae tenellae rarius annuae nunc frutices robusti tamen a caeteris facile distinguendae: foliis variis maximam partem ovatis nunc tenuibus nunc subcoriaceis rugosis etiam bullatis saepius petiolatis; floribus rarius in foliorum axillis maximam partem in spicis saepius interruptis rarius congestis interdum in racemis dispositis, bracteis saepius deciduis subtentis: calycum labia superiore maximam partem integra frequenter trimucronata 3—9-venis, inferioris laciniis saepius ovatis; corollarum vel coccinearum vel caerulearum interdum albidarum vel rosearum tubo cylindrato nunc recto nunc flexuoso interdum sub labiam inferiorem ventricoso, intus nudo vel papillis rarius rugis transversis ornato, frequenter subtus ad basim invaginato, labia superiore erecta plus minusve galeata, inferiore trifida lacinia media majore interdum emarginata; staminibus duobus sub labiam superiorem ascendentibus nunc exertis nunc inclusis filamento pro rata brevissimo, connectivo ("jugo") elongato in tubum porrecto infra connexum dilato ("gubernaculo") et longitudinaliter connato vel integro vel ad connexum in dentem dilato, loculo infimo abortivo rarissime fecundo; styli nunc pilosi nunc glabri ramis planis postico saepius longiore; gynobasi incrassata et postice dilatata ("cornu"); nuculis ovatis madefactis pelliculo (?semper) obtectis hilo obscuro parvo in basi posito.

[1]) While called "Sections" by Bentham, his secondary groups within the genus were in fact subgenera; this category was apparently not employed by him at the period concerned. I am accordingly loath to employ Briquet's name which is purely synonymous, particularly since Bentham's term is widely established.

Conspectus sectionum.

1. *Axillares*
2. *Microsphace*
3. *Tomentellae*
4. *Purpusiana*
5. *Cucullatae*
6. *Fernaldia*
7. *Caducae*
8. *Lavanduloideae*
9. *Sigmoideae*
10. *Punctatae*
11. *Corrugatae*
12. *Discolores*
13. *Uliginosae*
14. *Micranthae*
15. *Rhombifoliae*
16. *Siphonantha*
17. *Macrostachyae*
18. *Hastatae*
19. *Standleyana*
20. *Blakea*
21. *Wrightiana*
22. *Gardoquiiflorae*
23. *Bracteata*
24. *Glareosae*
25. *Potiles*
26. *Mitratae*
27. *Phoeniceae*
28. *Mineatae*
29. *Rubescentes*
30. *Biflorae*
31. *Cylindriflorae*
32. *Brittonia*
33. *Ekmania*
34. *Subrotundae*
35. *Sulcatae*
36. *Flexuosae*
37. *Incarnatae*
38. *Iodophyllae*
39. *Chariantha*
40. *Membranaceae*
41. *Flocculosae*
42. *Tenuistachya*
43. *Scorodonia*
44. *Uricae*
45. *Rudes*
46. *Farinaceae*
47. *Malacophyllae*
48. *Flavidae*
49. *Dusenostachys*
50. *Donnellsmithia*
51. *Pennellia*
52. *Atratae*
53. *Fendlera*
54. *Polystachyae*
55. *Urbania*
56. *Carneae*
57. *Angulatae*
58. *Ampelophyllae*
59. *Maxonia*
60. *Insignifoliae*
61. *Briquetia*
62. *Umbratiles*
63. *Fulgentes*
64. *Pavonia*
65. *Nobiles*
66. *Muricatae*
67. *Erythrostachys*
68. *Silvicolae*
69. *Coeruleae*
70. *Cardinales*
71. *Conzattiana*
72. *Sphacelioides*
73. *Leonuroideae*
74. *Skeptostachys*
75. *Asperifoliae*
76. *Hoehneana*
77. *Leucocephalae*
78. *Tuberosae*
79. *Longiflorae*
80. *Brandegeia*
81. *Pruinosae*
82. *Palmerostachys*
83. *Killipiana*
84. *Peninsulares*
85. *Tubiflorae*
86. *Iodanthae*
87. *Purpureae*
88. *Floridae*
89. *Albolanatae*
90. *Curtiflorae*
91. *Secundae*

Clavis sectionum.

A Stamina sub labiam superiorem ascendentia et e labia patentim exserta. **B** Corollarum tubi intus infra medium modo papillis binis vel quatuor modo rugis binis transversis (*Mitratarum* longitudinaliter) ornati. **C** Calycum labia superior imprimis 3-venis, rarius 5—7-venis (vide etiam *Flexuosas* etiam *Purpureas*) 86. *Iodanthae*. **CC** Calycum labia superior 5—7-venis. **D** Corollarum labia superior saepius quam tubus longior; pili ramosi 26. *Mitratae*.

DD Corollarum labia superior quam tubus brevior. **E** Corollarum tubi ad basim vix invaginati interdum sub papillas angustati. **F** Bracteae perstatae; calyces extus pilis longioribus extensis glandulosis viscidi 27. *Phoeniceae*. **FF** Bracteae deciduae; calyces glabri nisi rubrovillosi vix glandulosi. **G** Stamina ad tubi medium et infra posita 36. *Flexuosae*. **GG** Stamina ad fauces posita 38. *Iodophyllae*. **EE** Corollarum tubi fere recti ad basim sub papillas invaginati; stamina ad fauces posita 39. *Chariantha*. **BB** Corollarum tubi intus omnino nudi (*Sulcatarum* et *S. cinnabarinae* ad basim longitudinaliter sulcato-invaginati). **C** Calycum labia superior imprimis 3-venis (vide etiam *S. tiliaefoliam*). **D** Styli pilosi. **E** Calycum venae in basi incrassatae ad orem reticulato-ramosae; plantae mexicanae 81. *Pruinosae*. **EE** Calycum venae imprimis simplices. **F** Plantae austro-americanae. **G** Stamina ad fauces posita 88. *Floridae*. **GG** Stamina ad tubi medium posita 29. *Rubescentes*. **FF** Plantae mexicanae calycum labiis saepius aristulatis 90. *Curtiflorae*. **DD** Styli glabri. **E** Corollarum tubi 4—9 mm longi; flores in spicas densas cylindratas conferti; plantae cubenses 21. *Wrightiana*. **EE** Corollarum tubi 12—43 mm longi; flores vel in racemis vel in spicis interruptis rarius congestis dispositi. **F** Corollarum labia inferior subnulla quam superior multo brevior 90. *Curtiflorae*. **FF** Corollarum labia inferior superiorem subaequans vel longior. **G** Flores oppositi in racemis dispositi. **H** Corollae rubrae vel coccineae; folia in basi plus minusve angustata; plantae cubenses (vide etiam *Ekmania*) 32. *Brittonia*. **HH** Corollae caeruleae; folia deltoideo-sagittata; plantae mexicanae et centrali-americanae (vide etiam *Blakea*) 19. *Standleyana*. **GG** Flores 3—9 in verticillastris in spicis interruptis vel congestis dispositi. **H** Bracteae perstatae lanceolatae; corollarum tubi subtus ad basim longitudinaliter sulcato-invaginati; plantae guatemalenses 35. *Sulcatae*. **HH** Bracteae deciduae vel caducae; corollarum tubi integri. **I** Corollae atro-cyaneae flexuosae; plantae boreali-andinae 16. *Siphonantha*. **II** Corollae rubrae vel coccineae rarius flavae; plantae Haitensi-domingenses 33. *Ekmania*. **CC** Calycum labia superior 5—7-venis et ultra. **D** Corollarum caerulearum tubi 3,5—6 mm longi; styli glabri ramus posticus saepius brevior etiam subnullus. **E** Folia palaeforma; flores oppositi; staminum gubernacula quam connectiva duplo breviora 18. *Hastatae* (vide etiam *Blakea*). **EE** Folia ovata vel deltoideo-ovata; flores 2—6 in verticillastris et ultra; staminum gubernacula connectiva subaequantia. **F** Herbae boreali-americanae; flores bracteis parvis perstatis vel tarde deciduis subtenti 14. *Micranthae*. **FF** Herbae annuae austro-americanae; flores bracteis caducis parvis subtenti 15. *Rhombifoliae*. **DD** Corollarum tubi 10—43 mm longi (vide etiam *S. Regla*)

E Styli glabri. F Corollae caeruleae vel albidae (rarius roseae). G Flores oppositi in bracteorum deciduorum axillis solitarii; folia plerumque sagittata vel hastata (vide etiam *Standleyana* etiam *Blakea*) 18. *Hastatae*. GG Flores 3—6 et ultra in verticillastris; folia ovata vel ovato-cordata. H Corollarum tubi flexuosi recurvo-ascendentes; staminum connectiva fere ad medium connexa 16. *Siphonantha*. HH Corollarum tubi recti; staminum connectiva fere ad basim connexa gubernaculo itaque pro rata breviore 17. *Macrostachyae*. FF Corollae rubrae vel coccineae. G Staminum gubernacula ad connexum in dentem acutum producta. H Plantae argentinae; bracteae deciduae 28. *Mineatae*. HH Plantae brasilianae: bracteae insignes perstatae 74. *Skeptostachys*. GG Staminum gubernacula integra. H Flores in bracteorum deciduorum axillis solitarii oppositi. I Plantae cubenses foliis imprimis ellipticis; stamina ad fauces posita (vide etiam *Ekmania*) 32. *Brittonia*. II Plantae andinae foliis imprimis deltoideis; stamina ad tubi medium posita 30. *Biflorae*. HH Flores 3—6 in verticillastris (rarius oppositi). I Plantae mexicanae et centrali-americanae calycibus caudis exclusis 3—7 mm longis 37. *Incarnatae*. II Plantae austro-americanae (*S. coccinea* excepta) calycibus 6—20 mm longis. J Plantae brasilianae (*S. coccinea* late disseminata est) 34. *Subrotundae*. JJ Plantae andinae; styli ramus posticus quam anticus longior (*S. quitensi* exclusa) 31. *Cylindriflorae*. JJJ Plantae haitensi-domingenses; styli ramus posticus brevis etiam nullus 33. *Ekmania*. EE Styli pilosi vel hirtelli. F Stamina ad tubi medium posita 29. *Rubescentes*. FF Stamina ad fauces posita. G Corollarum tubi quam calyces quadruplo longiores; plantae mexicanae 37. *Incarnatae*. GG Corollarum tubi quam calyces duplo longiores. H Calycum labiae attenuatae; styli ramus posticus longissimus 90. *Curtiflorae*. HH Calycum labiae acutae; styli ramus posticus brevior 34. *Subrotundae*.

AA Stamina sub labiam superiorem ascendentia et in galea omnino inclusa. B Calycum labia superior imprimis 3-venis. C Corollarum tubi intus ad basim papillis binis vel quatuor interdum rugis ornati (vide etiam *Invaginatas* species seq.). D Corollarum labia inferior quam superior patentim longior. E Corollae roseae vel rubro-purpureae rarius pallidae; petioli foliorum laminas magnam partem subaequantes; calycum maturorum pedicella magnam partem 3—4 mm longa et ultra 56. *Carneae*. EE Corollae caeruleae; petioli quam foliorum laminae magnam partem dimidia parte breviores; calycum maturorum pedicella saepius 1—2 mm longa, glomerula itaque conferta 54. *Polystachyae*. DD Corollarum labia inferior quam superior subaequilonga vel brevior (vide

etiam *Polystachyas*). E Corollarum saepius caerulearum tubi infra medium sub papillas caepius constricti superne itaque ventricosi 6—11 mm (rarius 13 mm) longi 59. *Maxonia*. EE Corollarum roseo-purpurearum vel coccinearum tubi superne gradatim ampliati vix tamen ventricosi 15—22 mm (rarius 10 mm) longi (vide etiam *S. erythrostoma*). F Folia ovata in basi rotundata interdum rotundato-angustata; corollae roseo-purpureae 87. *Purpureae*. FF Folia anguste ovata vel elliptica in basi ad petioles angustata etiam extenuata breviter petiolata; corollae coccineae 83. *Killipiana*. CC Corollarum tubi intus epapillati frequenter tamen invaginati. D Styli ramus posticus quam anticus patentim brevior interdum nullus. E Corollarum labiae subaequilongae generis brevissimae habitu *Gardoquiae*: stamina ad tubi medium posita 22. *Gardoquiiflorae*. EE Corollarum labiae 5—40 mm longae; stamina ad fauces posita. F Styli glabri: folia saepius hastata vel deltoidea; flores oppositi 20. *Blakea*. FF Styli pilosi; folia ovalia vel oblonga in basi rotundata et angustata; flores tres et ultra in verticillastris 42. *Tenuistachya*. DD Styli ramus posticus attenuatus et quam anticus duplo triplove longior (*Secundarum* frequenter subaequilongus). E Styli ramus anticus patentim excavatus et in apice truncatus; staminum gubernaculum oblongo-deltoideum quam filamenti pars superior duplo triplove longius 8. *Lavanduloideae*. EE Styli ramus anticus integer acutus: staminum gubernacula vel integra vel ad connexum in dentem parvum acutum vel extensum vel retrorsum nullomodo assurgentem producta. F Plantae insulanae imprimis haitenses foliis magnam partem 1—3 cm longis 55. *Urbania*. FF Plantae continentis (*Angulatarum*, *S. haitensis* etiam *S. lamiifolia* etiam *Tubiflorarum* excepta) foliis grandioribus. G Pili ramosi. H Flores in foliorum axillis dispositi; plantae venezuelanae 53. *Fendlera*. HH Flores in spicis compactis dispositi: plantae chihuahuanae 82. *Palmerostachys*. GG Pili simplices (nisi *S. fluviatilis*); flores interrupto-spicati. H Stamina ad tubi medium posita 29. *Rubescentes*. HH Stamina ad fauces rarius (*Secundarum* et *Curtiflorarum*) inter fauces et tubi medium posita. I Corollarum labia inferior incurva concava quam superior vel brevior vel subaequilonga interdum subnulla; stamina inter tubi medium et fauces posita (*S. venosa* excepta). J Plantae mexicanae (vide etiam *Briquetia*) 90. *Curtiflorae*. JJ Plantae brasilianae 91. *Secundae*. II Corollarum labia inferior deflexa: stamina ad fauces posita. J Corollarum labia inferior quam superior brevior vel subaequilonga. K Corollae roseo-purpureae (vide *Briquetia*). L Plantae cubenses 66. *Muricatae*. LL Plantae Californiae inferioris 84. *Peninsulares*. LLL Plantae continentis vel insulanae (vide etiam *Carnearum*, *S. pseudogracilem* etiam *Pruinosas*). M

Styli glabri: folia oblongo-lanceolata 68. *Silvicolae.* **MM** Styli pilosi; folia plerumque ovata 85. *Tubiflorae.* **KK** Corollae cyaneae (vide etiam *Dusenostachys* etiam *Polystachyas*) 61. *Briquetia.* **JJ** Corollarum labia inferior quam superior longior. **K** Corollarum tubi 15—21 mm longi. **L** Plantae austro-americanae; folia rotundato-cordata 58. *Ampelophyllae.* **LL** Plantae boreali-americanae. **M** Folia oblongo-ovata in basi truncata; plantae mexicanae 51. *Pennellia.* **MM** Folia elliptica insignia marginibus acute inciso-serrulatis; plantae guatemalenses 60. *Insignifoliae.* **KK** Corollarum tubi 3,5—14 mm longi (14—17 mm *S. flaccidae* et bractea perstata; vide etiam *Polystachyas*). **L** Calyces extus glabri vel hirtelli vix tamen farinacei 57. *Angulatae.* **LL** Calyces extus pilis minutis appressis dense farinacei (plantae imprimis Texanae) vel lanulosi (plantae Coahuilenses), ore subtruncato 46. *Farinaceae.*

BB Calycum labia superior 5—9-venis et ultra (vide tamen aliquando *Purpureas. Tubifloras, Maxonia, Killipiana* etiam *Rubescentes*). **C** (p. 42) Flores in glomerulis bracteis perstatis rarius tarde deciduis subtentis vel in foliorum axillis dispositi. **D** Staminum gubernacula geniculata plus minusve deltoidea et in dentem assurgentem rarius obscurum producta (vide etiam *Blakea*). **E** Styli ramus anticus patentim sigmoideo-flexuosus 9. *Sigmoideae.* **EE** Styli ramus anticus aliquando deltoideus aliquando concavus saepius arcuatus nullomodo sigmoideus. **F** Styli glabri (vide etiam *Uliginosas* etiam *Membranaceas*) 2. *Microsphace.* **FF** Styli pilosi. **G** Calycum labia superior cucullata inferiorem duplo superans; herbae crassae 5. *Cucullatae.* **GG** Calycum labiae subaequilongae. **H** Herbae perennes sat parvae interdum prostratae: styli ramus anticus complanato-deltoideus 13. *Uliginosae.* **HH** Frutices sarmentosi vel suffrutices pilis frequenter ramosis: styli ramus anticus sat attenuatus vix complanato-deltoideus 3. *Tomentellae.* **DD** Staminum gubernacula vel integra vel ad connexum in dentem retrorsum interdum extensum dilata. **E** Pili ramosi. **F** Corollarum tubi intus nudi 41. *Flocculosae.* **FF** Corollarum tubi intus papillis binis ornati. **G** Plantae austro-americanae 73. *Leonuroideae.* **GG** Plantae mexicanae 71. *Conzattiana.* **EE** Pili simplices. **F** Herbae perennes parvae humiles foliis parvis plerumque 5—10 mm longis; flores 1—3 in foliorum axillis dispositi 1. *Axillares.* **FF** Herbae sat amplae vel frutices rarius tenellae. **G** Corollarum coccinearum vel rosearum tubi 13—35 mm et ultra longi. **H** Flores in foliorum supremorum axillis dispositi (vide etiam *Secundas*). **I** Corollarum tubi intus ad basim papillis binis ornati. **J** Plantae andinae stylis pilosis (vide etiam *Killipiana*) 73. *Leonuroideae.* **JJ** Plantae mexicanae stylis glabris 71. *Conzattiana.* **II** Corollarum tubi intus nudi: plantae mexicanorum 65. *Nobiles.* **HH** Flores in bracteorum perstatorum

axillis dispositi (vide etiam *Nobiles* etiam *S. neocidensem* et *S. vestitam*). I Corollarum labia inferior quam superior patentim longior; plantae mexicanae 80. *Brandegeia*. II Corollarum labiae subaequilongae vel inferior brevior: plantae austro-americanae. J Corollarum tubi integri. K Corollarum labia inferior deflexa 10—12 mm longa 74. *Skeptostachys*. KK Corollarum labia inferior incurva 1,5—5,5 mm rarius 8—9 mm (*S. splendens*) longa 91. *Secundae*. JJ Corollarum tubi ad basim valde invaginati 76. *Hoehneana*. GG Corollarum caerulearum rarius albarum tubi 2,5—9 mm longi (*S. atrocyaneae* 23—24 mm). H Styli imprimis glabri rarius sparse hispiduli. I Styli ramus posticus quam anticus patentim brevior (vide etiam *Blakea*). J Plantae continentis erectae annuae foliis plerumque elliptico-oblongis 24. *Glareosae*. JJ Plantae praesertim insulanae (Galapagos et Antillarum rarius Floridae et Yucatan) saepius annuae foliis magnam partem deltoideo-ovatis etiam rotundatis 14. *Micranthae*. II Styli ramus posticus quam anticus patentim longior (vide etiam *Glareosas*). J Styli supra nuculas articulati; gynobasis columella glandulis sessilibus dense obsita perstata 25. *Potiles*. JJ Styli inter nuculas articulati; gynobasis columella eglandulosa 40. *Membranaceae*. HH Styli plus minusve villosi. I Styli ramus anticus concavus in apice truncatus; herbae annuae 23. *Bracteata*. II Styli ramus anticus sat acutus vix excavatus nullomodo truncatus: herbae perennes vel frutices. J Corollarum tubi 23—24 mm longi: plantae bolivianae 69. *Coeruleae*. JJ Corollarum tubi 6—9 mm longi. K Flores in spicis compactis dispositi; plantae austro-mexicanae et guatemalenses (vide etiam *S. brevifloram*) 50. *Donnellsmithia*. KK Flores in spicis interruptis dispositi. L Folia subsessilia; plantae bolivianae (vide etiam *Farinacearum*) 47. *Malacophyllae*. LL Folia petiolis 1—4 cm longis et ultra elata; plantae boreali-americanae (tamen *S. pallida* Argentinae) 46. *Farinaceae*.

CC Flores bracteis caducis vel deciduis subtenti. D Staminum gubernacula geniculata plus minusve deltoidea et in dentem assurgentem rarius obscurum producta (vide etiam *Discolores*). E Styli ramus anticus patentim sigmoideo-flexuosus; corollarum tubi intus papillati 9. *Sigmoideae*. EE Styli ramus anticus vel arcuatus vel complanato-deltoideus aliquando concavus vel planus vix tamen sigmoideus. F Corollarum tubi ad basim patentim invaginati. G Plantae andinae foliis corrugatis 11. *Corrugatae*. GG Plantae mexicanae foliis grandibus sat laevibus 6. *Fernaldia*. FF Corollarum tubi vix invaginati, interdum constricti vel papillis intusornati. G Herbae annuae caducae saepe exiles 7. *Caducae*. GG Herbae perennes. H Styli ad apices valde complanati, ramo antico subdeltoideo 13. *Uliginosae*. HH Styli vix complanati, ramo antico

arcuato vix deltoideo. J Pili ramosi (*Ballotaeflori bus* exceptis) 3. *Tomentellae*. JJ Pili simplices. K Plantae peruvianae stylis hirsutis 10. *Punctatae*. KK Plantae mexicanae stylis glabris 4. *Purpusiana*. DD Staminum gubernacula vel integra vel ad connexum in dentem parvum extensum vel retrorsum ornata. E Stamina inter corollae tubi medium et fauces posita; corollae labiae breves inferioris lacinia media incurvo-concava (vide etiam *Albolanatas* et *Rubescentes*) 91. *Secundae*. EE Stamina ad fauces posita. F Styli ramus posticus quam anticus patentim brevior; corollae semper caeruleae. G Corollarum tubi 20—33 mm longi 69. *Coeruleae*. GG Corollarum tubi 3—6 mm longi; herbae imprimis annuae erectae. H Calycis labia superior 7-venis; bracteae plerumque perstatae; herbae praesertim insulanae etiam in Florida et Yucatan incolunt 14. *Micranthae*. HH Calycis labia superior 5-venis: bracteae saepius deciduae interdum perstatae; plantae continentis. I Folia plerumque elliptico-oblonga; plantae mexicanae 24. *Glareosae*. II Folia plerumque deltoidea; plantae andinae 15. *Rhombifoliae*. FF Styli ramus posticus quam anticus patentim longior (vide etiam *S. chorianthos*). G Corollarum tubi ad basim plus minusve constricti vel patentim invaginati et saepius papillis vel rugis binis quatuorve ornati (vide etiam *Flocculosas*, *Privoideas*, *Rudes* et *S. consimilem*). H Styli glabri. I Corollae coccineae vel flavo-aureae. J Plantae mexicanae floribus vel in racemis brevibus vel in foliorum supremorum axillis saepius oppositi 71. *Conzattiana*. JJ Plantae peruvianae floribus in spicis interruptis speciosis dispositi 62. *Umbratiles*. II Corollae caeruleae vel purpureae. J Corollarum tubi 42—45 mm longi 79. *Longiflorae*. JJ Corollarum tubi 13—14 mm longi. K Corollae atro-cyaneae; calyces pro florum magnitudine grandes; plantae peruvianae 12. *Discolores*. KK Corollarum tubi albidae, labiae atro-cyaneae; plantae mexicanae 52. *Atratae*. HH Styli pilosi vel villosi interdum hirtelli. I Pili ramosi. J Plantae peruvianae; corollarum tubi 13—23 mm longi 64. *Pavonia* (vide etiam *Cardinales*). JJ Plantae mexicanae: corollarum tubi 3,5—9 mm longi 43. *Scorodonia*. II Pili simplices. J Corollarum saepius caerulearum interdum albarum tubi 5—15 (rarius 18) mm longi. K Corollae flavidae; caules ad angulos decurrenti-villosi; herbae brasilianae 48. *Flavidae*. KK Corollae caeruleae rarius albidae; caules vix decurrenti-villosi; plantae imprimis mexicanae (vide etiam *Maxonia*). L Folia deltoidea vel ovata (*S. occiduae* oblongo-lanceolata; vide etiam *S. similem*). M Corollarum tubi albi 13 mm longi: praesertim labia inferior quam superior brevior atro-cyanea 52. *Atratae*. MM Corollae concolores caeruleae vel pallidae; labia inferior superiorem patentim superans. N Corollarum tubi ad basim patentim invaginati 44. *Uricae*.

NN Corollarum tubi integri 43. *Scorodonia*. LL Folia linearia vel oblonga; caules rarius pilis longioribus eglandulosis conspersi 46. *Farinaceae*. JJ Corollarum rubrarum vel coccinearum interdum roseo-purpurearum tubi 15—35 mm (rarius 13—14 mm) longi (vide etiam *Purpureas* etiam *Killipiana*). K Plantae austro-americanae. L Corollae ad basim valde invaginatae nullomodo lateraliter saccatae 76. *Hoehneana*. LL Corollae ad basim lateraliter impresso-saccatae: herbae radicibus tuberiferis 78. *Tuberosae*. KK Plantae boreali-americanae. L Corollarum labia superior inferiorem subaequans vel longior. M Corollarum tubi invaginati tamen epapillati 84. *Peninsulares*. MM Corollarum tubi intus papillis binis ornati modo invaginati modo integri 70. *Cardinales*. LL Corollarum labia superior quam inferior patentim brevior. M Corollae ad basim constrictae vix tamen papillis ornatae 80. *Brandegeia*. MM Corollae ad basim plus minusve invaginatae et intus papillis binis ornatae 63. *Fulgentes*.

GG Corollarum tubi imprimis integri interdum leniter constricti vel invaginati nullomodo papillis nisi minutissimis intus ornati. H Pili ramosi. I Corollarum rubro-purpurearum tubi 20—28 mm longi 77. *Leucocephalae*. II Corollarum tubi 3,5—18 mm longi. J Corollarum labiae subaequilongae lacinia media incurva 89. *Albolanatae*. JJ Corollarum labia inferior patentim longior patens. K Folia magnam partem elliptico-oblonga. frequenter ovata rarius deltoidea. saepius integra vel obscure crenulata 41. *Flocculosae*. KK Folia magnam partem deltoidea rarius deltoideo-oblonga interdum ovata saepius bullato-rugosa 43. *Scorodonia*. HH Pili simplices (calycum *S. Hilarii* ramosi). I Corollae coccineae vel rubrae tubis plerumque 25—90 mm (rarius 12—22 mm) longis (vide etiam *S. Greggii*. *S. macellariam* et *S. subhastatam*). J Calyces inflati subglobosi plus minusve venulosi, saepius rubri 67. *Erythrostachys*. JJ Calyces tubulosi nullomodo inflati. K Styli glabri (vide etiam *Umbratiles Subrotundas* etiam *S. rivularem*) 79. *Longiflorae*. KK Styli pilosi (vide etiam *Subrotundas Incarnatas* et *S. Weberbaueri* et *Tuberosas*). L Frutices alti rarius herbae perennes (vide etiam *Tubifloras* etiam *S. Dugesianam*) 65. *Nobiles*. LL Herbae perennes brasilianae altitudine ad 1 m caulibus paucis simplicibus 75. *Asperifoliae*. II Corollae magnam partem caeruleae rarius flavidae (*S. madrensis*) rarius rubrae (*S. Greggii*) vel alboroseae (*S. subhastatae*) frequenter albidae, tubis plerumque 4—20 mm (rarius 20—30) longis. J Herbae annuae stylis imprimis glabris interdum sparsissime antice setosis (vide etiam *Purpusiana*) 24. *Glareosae*. JJ Herbae perennes vel frutices stylis pilosis vel hirtellis. K Corollarum labiae pro rata breviores lacinia media inferioris incurvo-concava; flores albi 89. *Albolanatae*. KK Co-

rollarum labia inferior sat deflexa nullomodo incurvo-concava (vide tamen *Coeruleas*). **L** Corollarum tubi 4—11 mm (*S. cognatae*, *S. ovatifoliae* et *S. rhinosinae* 11—22 mm) longi (vide etiam *S. biserratam*, *S. monclovensem* et *S. discolorem*). **M** Folia maximam partem deltoidea vel ovata in basi rotundata vel truncata saepe bullulata (vide etiam *S. consimilem*). **N** Plantae andinae foliis sat laevibus subtus molliter pubescentibus 47. *Malacophyllae*. **NN** Plantae mexicanae foliis saepius bullulatis magnam partem pilis ramosis vestitis 43. *Scorodonia*. **MM** Folia imprimis oblonga vel elliptica rarius linearia interdum ovata. **N** Plantae campicolae brasiliano-argentinae (una sinaloensis) 45. *Rudes*. **NN** Plantae andinae vel mexicanae. **O** Calyces extus appresso-hirtelli interdum glabri 46. *Farinaceae*. **OO** Calyces extus pilis brevibus extensis frequenter glandulosis vestiti (vide etiam *Tomentellas*) 41. *Flocculosae*. **LL** Corollarum tubi 12—30 mm (11 mm *S. biserratae* etiam *S. monclovensis*; vide etiam *S. discolorem*). **M** Plantae mexicanae. **N** Flores cyaneae; folia ampla ovata vel rotundata-ovata 49. *Dusenostachys*. **NN** Flores albo-roseae; folia subhastata 72. *Sphacelioides*. **MM** Plantae brasilianae. **N** Corollarum labia superior 6—7 mm alta quam inferior brevior 49. *Dusenostachys*. **NN** Corollarum labia superior 14—15 mm alta quam inferior longior 69. *Coeruleae*.

1. Sect. **Axillares.**

Subsect. *Axilliflorae* Benth., Lab. Gen. et Sp. 270. 1833 per *S. axillarem* et al. constituta est: speciem typicam *S. axillarem* designo.

Herbae perennes parvae humiles caulibus pluribus ramosis procumbentibus e caudice lignoso frequenter stoloniformibus et in nodis radicantibus; foliis 5—10 mm longis oblanceolatis vel obcuneatis subsessilibus: floribus 2—3 interdum solitariis in foliorum supremorum axillis dispositis: calycibus tenuibus labiis subaequilongis subspinosis. superiore 7-venis trispinulosa vel trimucronata; corollarum pallide violacearum tubo subcylindrato tenue 11—14 mm longo, intus nudo, labia superiore 2—2,5 mm alta. inferiore triplo longiore alte emarginata; staminibus ad fauces positis in galea inclusis. gubernaculo integro interdum thecam verisimiliter fertiliem gestato; styli glabri tenuis ramo postico breviore debile.

Specis una *mexicana* . . . . 1. *S. axillaris*

1. **S. axillaris** Moc. et Sesse ex Benth., Lab. Gen. et Sp. 270, 1833 et in DC. Prodr. 12, 313, 1848 per specim. in Mexico prov. Puebla prope Tepeaca a Mocino et Sesse lectum constituta est: typum olim in herb. Lambert. verisimiliter perditum non reperire potui tamen specim. verum in herb. horti bot. Matrit. etiam herb.

Boissier. vidi. — *S. cuneifolia* Benth.. l. c.. per specim. in Mexico verisimiliter in prov. Oaxaca a Karwinski lectum constituta est; typum in herb. Monac. non reperire potui.

Herba perennis humilis fruticulosa altitudine 10—15 cm caulibus pluribus ramosis procumbentibus saepe stoloniformibus et in nodis radicantibus in basi duris superne hispidulo-pilosis, internodiis 1—3 cm longis; foliorum laminis plerumque 5—10 mm longis nunc oblanceolatis nunc cuneato-obovatis ad basim angustatis subsessilibus margine nunc integra nunc remote dentata, paginis ambobus plus minusve recurvo-hispidulis interdum cinereis rarius plus minusve glandulosis; floribus in foliorum supremorum axillis 2—3 interdum solitariis; calycibus florentibus 5—6,5 mm longis extus hispidulis in maturitate paulo auctis 6—8 mm longis, labia superiore trispinosa vel trimucronata, inferioris laciniis tubum frequenter aequantibus acutissimis; corollarum tubo 11—14 mm longo intus nudo, tubuloso, superne vix ampliato, labia superiore 2—2,5 mm alta, inferiore triplo longiore.

I cannot escape the conclusion that the two forms described by Bentham as *S. cuneifolia* and *S. axillaris*, are conspecific. The flower structure and pubescence scarcely permit segregation, while in habit and leaf characteristics the extremes are such as might well be expected within one species.

S. axillaris is apparently a plant of more arid habit in which the branchlets tend to ascend and root little or not ar all. Its leaves are entire and oblanceolate.

S. cuneifolia has usually longer and stoloniform branches and its leaves are cuneate-obovate. However, varying combinations of these characters occur. It is possible that the stoloniform branches are seasonal, however, rather than ecological responses. I have not found Bentham's type, but his description and later determinations leave little doubt as to the plant described.

Mexico: San Luis Potosi: San Luis Potosi; Hidalgo: Pachuca; Puebla: Tepeaca; Acatzingo; Esperanza: Cerro de Piedra; Coatepec; San Luis Tultitlanapa; Oaxaca: Sierra de Yavezia: Santa Catalina; La Parada.

2. Sect. **Microsphace.**

Salvia sect. *Calosphace* subsect. *Microsphaceae* Briq. (*Misellae* Briq. et *Privoideae* Briq.) in Engler u. Prantl, Nat. Pflanzenf., ed. 1, 277, 1897 per sect. *Microsphace* Benth., constituta est; species typica est *S. occidentalis*.

Herbae saepius procumbentes (? semper) annuae frequenter in nodis infimis radicantes floribus parvis bracteis acuminatis perstatis subtentis; calycum labia superiore frequenter trimu-

cronata vel trispinulosa 5-venis, inferioris laciniis acuminatis saepius spinosis; corollarum tubo intus nudo et glabro leniter ampliato, limbo caeruleo ad fauces albido-striato; staminibus in galea inclusis in faucibus positis, jugo geniculato in dentem dilatum assurgentem producto; stylo glabro in apice incrassato, ramis plano-concavis amplis postico acuminato antico rotundato-truncato. Herbae praesertim insulanae a Florida usque ad Peru disseminatae sunt.

Calyces maturi vix 3 mm longi; labia superior obscure trimucronata rotundato-truncata, inferioris dentes acuti, nullomodo spinosi 2. *S. occidentalis*
Calyces maturi 3,5—10 mm longi; labia superior et dentes inferioris patentim mucronata vel spinosa
 Calyces maturi 3,5—5 mm longi . . . . . 3. *S. misella*
 Calyces maturi 5,5—10 mm longi
  Corollarum tubi 2,5—3 mm longi
   Calyces extus pilis glandulosis capitatis hispidi, maturi 5,5—7 mm longi . . 4. *S. riparia*
   Calyces extus pilis glandulosis capitatis et longioribus setosis vestiti, maturi 7—10 mm longi . . . . 5. *S. setosa*
  Corollarum tubi 4—5,5 mm longi
   Calyces extus pilis longioribus setosis vestiti; corollae 14—15 mm longae . 6. *S. monantha*
   Calyces extus pilis glandulosis hispiduli; corollae 9—10 mm longae . . . . . 7. *S. pseudoprivoides*

2. **S. occidentalis** Sw., Prodr. Veg. Ind. Occ. 14, 1788 per *Salviam repentem* (Browne Jam. 117) constituta est; *Salvia repens* per *Verbenam minimam chamaedrios folio* (Sloane t. 107) constituta est; typum in herb. Mus. Brit. vidi. — *S. procumbens* Ruiz et Pavon, Fl. Peruv. 1, 27, 1798 per specimina in Peruvia prope Lima, Chancay et Huanuco a Ruiz et Pavon lecta constituta est: specimina vera vidi. — *S. martinicensis* Sessé et Moc., Fl. Mex. ed. 2, 9, 1894: specimen ex herb. hort. Matrit vidi.

Herba annua diffusa et procumbens etiam subscandens altitudine 30—40 cm et ultra ramis ad apices ascendentibus gracilibus nunc pilis crispulis ad facies hirtellis nunc glabris superne inter flores plus minusve glandulosis; foliorum laminis 2—6 cm longis, late ovatis vel subrhomboideis, acutiusculis, in basi cuneato-angustatis, margine convexiuscula supra medium crenato-serrata, pagina superiore pilis appressis conspersa, inferiore hirtella, ambobus interdum omnino glabris, petiolis ad 1 cm longis elatis; verticillastris maximam partem sexfloribus, bracteis late ovatis abrupte

acuminatis 2—2,5 mm longis perstatis subtentis, in racemis gracillimis 10—30 cm longis dispositis; calycibus florentibus 2 mm longis. ovato-cylindratis, extus pilis capitatis hispido-glandulosis, labia superiore truncata, obscure trimucronata, inferioris laciniis acuminato-ovatis, 0,5 mm longis nullomodo spinosis, in maturitate calycibus vix 3 mm longis, labiis compressis, pedicellis 1,5—2 mm longis elatis; corollarum tubo cylindrato 2,5 mm longo. labia superiore 1,5 mm longa concava erecta, labia inferiore 2,5 mm longa.

Per Americam calidiorem a Florida (Miami) usque ad Bolivia (La Paz) disseminata est.

3. **S. misella** Kunth in Humboldt et Bonpland, Voy., Nov. Gen. et Sp. Pl. 2, 290, 1817 per specim. in Mexico inter portum Acapulco et La Vinta del Exido a Humboldt et Bonpland lectum constituta est; typum in herb. Mus. Par. vidi. — *S. obscura* Benth., Lab. Gen. et Sp. 245, 1833 et in DC. Prodr. 12, 297. 1848 per specim. in Jamaica a Distin lectum constituta est: typum in herb. Kew. vidi.

Herba annua diffusa et procumbens altitudine 30—40 cm rarius ascendentibus gracilibus, pilis crispulis rarius hispidis extensis sparse pubescentibus interdum glabratis; foliorum laminis 1.5—3,5 cm longis. 1—2 cm latis, late ovatis vel subrhomboideis. acutiusculis, in basi cuneato-angustatis etiam extenuatis, margine convexiuscula, supra medium crenato-serrata, pagina superiore pilis appressis conspersis, inferiore hirtella. ambobus interdum omnino glabris, petiolis ad 1 cm longis elatis; verticillastris 1—12-floribus, bracteis late ovatis abrupte acuminatis 2—4 mm longis perstatis subtentis, in racemis gracillimis 10—30 cm longis dispositis; calycibus florentibus 2—2,5 mm longis, ovato-cylindratis. extus hispido-glandulosis, labia superiore rotundato-acuminata, etiam breviter spinosa inferioris laciniis acuminato-ovatis breviter spinosis, 1 mm longis, in maturitate calycibus 3,5—5 mm longis, labiis lateraliter compresses. pedicellis 1—2 mm longis elatis; corollarum tubo cylindrato 2,5 mm longo. labia superiore 1,5 mm longa concava erecta, labia inferiore 2.5 mm longa.

Cuba: Oriente, Pinar del Rio, Santa Clara, Matanzas; Jamaica; Porto Rico: Mexico: Tamaulipas, Vera Cruz, Yucatan. Guerrero. Colima. Jalisco. Nayarit, Sinaloa. Baja California.

4. **S. riparia** Kunth in Humboldt et Bonpland, Voy., Nov. Gen. et Sp. Pl. 2. 300, 1817 per specim. in Peruvia in ripa fluminis Chulcunas inter pagum Huancabamba et paramo de Guamani a Humboldt et Bonpland (no. 3530) lectum constituta est; typum in herb. Mus. Par. vidi. — *S. privoides* Benth., Bot. Voy. Sulph.

150, 1844 per specim. in Honduras Brit. ad sinum Fonseca a Sinclair lectum constituta est; typum in herb. Kew. vidi. — *S. viscosa* Sesse et Moc., Pl. Nov. Hisp. ed. 2, 8, 1893 et Fl. Mex. ed. 2, 7, 1894; specimina ex herb. horti Matrit. vidi. — *S. laterifolia* Fern. in Proc. Am. Acad. 35, 494, 1900 per specim. in Mexico prov. Sonora prope Guaymas in horto relicto a Palmer (no. 320) lectum constituta est; typum in herb. Gray., isotypos in herb. Kew. et Univ. Calif. (Berkeley) vidi.

Herba annua diffusa et procumbens altitudine 30—50 cm ramis ascendentibus gracilibus pilis crispulis pubescentibus rarius subglabris; foliorum laminis 2—3 cm longis, ovatis, acutiusculis, in basi cuneato-angustatis etiam extenuatis, margine supra medium convexiuscula, crenato-serrata, pagina superiore subhirsuta, inferiore saepius cinerea, petiolis ad 1 cm longis elatis; floribus 1—12 in verticillastris bracteis 3—3,5 mm longis erectis perstatis ovato-acuminatis acutissimis subtentis, in spicis interruptis gracilibus 10—20 cm longis dispositis; calycibus florentibus 3—3,5 mm longis, ovato-cylindratis, extus pilis capitatis hispido-glandulosis, in maturitate 5,5—7 mm longis, labiis divergentibus, superiore vel rotundata vel truncata, 1—3-mucronata, inferioris laciniis acuminato-ovatis spinosis, ore lateraliter compresso, pedicellis 2—3 mm longis elatis; corollarum tubo 2,5—3 mm longo, labia superiore vix 2 mm longa, inferiore 3 mm longa.

Jamaica; Haiti: Massif de la Selle; Cuba: Habana, Oriente, Pinar del Rio; Mexico: Sonora, Sinaloa, Jalisco, Michoacan, Oaxaca, Morelos, Mexico, Tamaulipas, Vera Cruz, Baja California, Campeche, Yucatan: Guatemala; Honduras; Costa Rica; Venezuela; Colombia: Ecuador; Peru.

5. **S. setosa** Fern. in Proc. Am. Acad. 35, 493, 1900 per specim. in Mexico prov. Chihuahua prope Hacienda San Jose a Palmer (no. 64) lectum constituta est; typum in herb. Gray., isotypos in herb. Smithson. et horti bot. Nov. Eborac. vidi. — *S. occidentalis* var. *Garberi* Chapm. in Bot. Gaz. 3, 111, 1878 per specim. in com. Manatee Floridae a Garber lectum constituta est; specim. verum in herb. Smithson. vidi.

Herba annua ramosa altitudine ad 40 cm caulibus gracilibus pilis crispulis pubescentibus interdum glabratis; foliorum laminis tenuibus, 2—5 cm longis, 1,5—4 cm latis, deltoideo-ovatis, subacutis, in basi ad petiolos 1—2 cm longos cuneato-extenuatis, margine serrata, pagina superiore sparse hispida etiam setosa inferiore nunc hirtella nunc glabra; floribus 1—3 in verticillastris bracteis perstatis ovato-acuminatis acutissimis subglabris 3—6 mm longis subtentis glomerulis inter se 0,5—1,5 cm distantibus, in spicis interruptis gracilibus dispositis; calycibus florentibus 4 ad



5 mm longis, extus pilis capitatis glandulosis et praesertim ad basim longioribus setaceis vestitis in maturitate 7—8 mm rarius 10 mm longis, labia superiore saepe trispinulosa, rotundata. inferioris laciniis ovato-acuminatis spinosis, pedicellis 2—3 mm longis elatis; corollarum tubo 3 mm longo, fere recto, labia superiore vix 2 mm alta, inferiore 3,5 mm longa.

Florida: Lake, Hillsborough, Manatee: Isla de Pinos; Mexico: Baja California, Sonora, Chihuahua, Sinaloa Nayarit. Oaxaca.

6. **S. monantha** Brandegee sp. nov. ined. per specim. in Mexico prov. Sinaloa prope Copradia ad Culiacan a Brandegee lectum constituta est; typum in herb. Univ. Calif. (Berkeley) vidi.

Herba annua altitudine 30—60 cm caulibus procumbentibus in nodis inferioribus interdum radicantibus repentibus ramis erectis gracilibus crispule pubescentibus; foliorum laminis rhomboideis 1,5—3,5 cm longis 0,5—1,5 cm latis, infra medium ad petiolos 5—10 mm longos cuneato-extenuatis, in apice acutis, margine serrata, paginis ambobus pilis setosis conspersis; floribus in verticillastris frequenter solitariis bracteis ovato-subulatis acutissimis strictis 8—10 mm longis subtentis; calycibus florentibus 6,5 ad 7,5 mm longis, pedicellis 1—2 mm longis elatis, extus pilis longioribus setosis conspersis, in maturitate 10 mm longis. labiis acuminatis spinosis: corollarum tubo 5,5 mm longo. labia superiore 5,5 mm longa, inferiore 10—11 mm longa.

Mexico: Sinaloa: Copradia ad Culiacan; Sonora: Los Conejos. Rio Mayo.

7. **S. pseudoprivoides** Epling sp. nov. per specim. in Mexico prov. Jalisco prope San Sebastian a Nelson (no. 4072) lectum constituta est; typum in herb. Smithson. vidi.

Herba verisimiliter annua habitu *S. privoides* caulibus 40 ad 60 cm longis et ultra superne puberulis; foliorum laminis ovatis 2—4 cm longis, 12—22 mm latis in apice acutiusculis in basi ad petiolos marginatos breves cuneato-extenuatis, margine serrata. paginis ambobus sparse hirtellis; floribus 3—6 in verticillastris bracteis rotundato-acuminatis perstatis 4—6 mm longis subtentis, pedicellis 2 mm longis elatis: calycibus florentibus 4,5—5 mm longis extus pilis glandulosis hispidulis labiis ambobus breviter spinosis, in maturitate non visis; corollarum tubo 4 mm longo. labia superiore 2,5 mm longa, inferiore 6—7 mm longa.

Mexico: Jalisco: San Sebastian.

3. Sect. Tomentellae.

Subsect. *Tomentellae* Epl. in Rep. Spec. Nov., Beiheft 85, 55. 1935. Species typica est *S. Gilliesii*.

Frutices sarmentosi vel suffrutices caulibus e caudice lignoso ascendentibus cortice discedente pilis plerumque ramosis tomentelli; foliis deltoideo-ovatis vel oblongis rarius subrotundis in basi saepius truncatis: bracteis interdum perstatis, glomerulis multifloribus; calycibus lateraliter compressis extus pilis saepius ramosis tomentellis et glandulis perlucidis sessilibus punctatis, labiis in maturitate hiantibus, superiore 7—9-venis saepius obscure trimucronata interdum habitu Ballotae dilatis; corollarum caerulearum tubo sat ventricoso intus ad medium vel nudo vel rugis binis obliquis interdum obscuris invaginato, labia superiore pubescente; staminum gubernaculo anguste deltoideo in dentem assurgentem producto rarius fere integro; styli pilosi vel glabri ramo superiore quam inferior duplo triplove longiore; ovulis frequenter dense pubescentibus.

Frutices modo andini modo mexicani a Texas et Arizona usque ad Argentina disseminati sunt.

Frutices andini
- Corollarum tubi 20 mm longi; staminum juga subintegra recta . . . . 14. *S. chorianthos*
- Corollarum tubi 4,5—12 mm longi; staminum juga in dentem assurgentem producta
  - Folia integra in basi angustata . . . . 18. *S. Humboldtiana*
  - Folia serrata in basi rotundata vel truncata etiam cordata
    - Foliorum pagina superior molliter cinereo-pubescens . . . . 13. *S. Lorentzii*
    - Foliorum pagina superior glabrata viridis
      - Foliorum laminae 8—12 cm longae 2.5—4 cm latae . . . . 16. *S. calolophos*
      - Foliorum laminae 2—8 cm longae 1 a 3 cm latae
        - Corollarum tubi 4,5—6,5 mm longi
          - Calycum labiae in apice subspinulosae; plantae peruvianae . . . . 11. *S. cuspidata*
          - Calycum labiae rotundato-mucronatae; plantae austro-andinae . . 12. *S. Gilliesii*
        - Corollarum tubi 8—12 mm longi
          - Calyces maturi 11—12 mm longi: foliorum pagina inferior albo-tomentella . . . . 15. *S. retinervia*
          - Calyces maturi 8 mm longi; foliorum paginae ambae sparse pubescentes inferior glanduloso-punctata 17. *S. Bangii*

Frutices boreali-americani imprimis Mexicani

Calyces extus pilis brevibus simplicibus hirtelli, in maturitate habitu *Ballotae*

Corollarum tubi 8.5—10 mm longi . . . 8. *S. vinacea*

Corollarum tubi 4—6 mm longi

Staminum connectiva cum antheris 6.5 ad 8 mm longa: folia late deltoideo-ovata subrotunda . . . . 9. *S. pinguifolia*

Staminum connectiva cum antheris 5 ad 6 mm longa; folia ovata vel deltoideo-ovata . . . . 10. *S. ballotaeflora*

Calyces extus pilis ramosis albo-tomentelli

Folia paliforma interdum linearia in apice rotundata in basi truncata: spicae 3 ad 6 cm longae

Calyces pilis ramosis lanatis et longioribus simplicibus glandulosis vestiti labiis acuminatis . . . . 25. *S. Coulteri*

Calyces pilis solum ramosis vestiti. tomentelli . . . . 24. *S. candicans*

Folia ovata vel deltoideo-ovata vel oblonga in apice obtusa in basi truncata vel rotundata; spicae plerumque 5—15 cm longae

Ovula glabra

Bracteae rotundato-acuminatae concavae; folia laevia tomentella alba 23. *S. Parryi*

Bracteae lanceolato-ellipticae planae: folia glabra bullulata viridia . . . 22. *S. rubropunctata*

Ovula dense pubescentia

Corollarum tubi 6.5—7 mm longi . . 20. *S. Goldmanii*

Corollarum tubi 5—5,5 mm longi

Plantae jaliscanae foliis deltoideo-ovatis spicis densis . . . . . . 19. *S. pruinosa*

Plantae oaxacanae foliis plerumque oblongo-ovatis spicis interruptis . 21. *S. fruticulosa*

8. **S. vinacea** Wooton and Standley in Contrib. U. S. Nat. Herb. **16**, 170, 1913 per specimen in New Mexico in montibus Florida dictis a Goldman (no. 1501) lectum constituta est; typum in herb. Smithson. vidi.

Frutex ramulis pilis simplicibus minutis cinereo-vestitis, internodiis saepius 1—3 cm longis; foliorum laminis maximam partem habitu Populi, late deltoideo-ovatis plerumque 1,5 ad 2,5 cm longis subaequilatis, in apice obtusis vel breviter acuminatis, in basi late cordatis etiam late cuneatis, petiolis

0,5—1 cm longis elatis. pagina superiore glabrata, inferiore minutissime tomentella subconcolore; floribus tribus in verticillastris bracteis tarde deciduis lanceolatis planis subtentis, glomerulis in spicis laxis 3—8 cm longis approximatis; calycibus florentibus 9—11 mm longis extus hirtellis, in maturitate 11—12 mm longis labiae inferioris laciniis 3,5—5 mm latis; corollarum tubo 8,5 ad 10 mm longo, labia superiore 5—6,5 mm alta, inferiore 7,5—8 mm longa; staminum connectivo cum antheris 12 mm longo.

Strongly resembles *S. pinguifolia* from which it differs primarily in the larger flowers.

New Mexico: Luna: Florida Mts., 5400—6500 ft. (Martins Spring).

9. **S. pinguifolia** Wooton et Standley in Contrib. U. S. Nat. Herb. 16, 169, 1913 per *S. ballotaefloram* var. *pinguifoliam* Fernald, l. c., constituta est. — *S. ballotaeflora* var. *pinguifolia* Fern. in Proc. Am. Acad. 35, 523. 1900 per specimen in Arizona in montibus San Francisco dictis ad Clifton a Greene (no. 300) lectum constituta est: typum in herb. Gray. vidi. — *S. ballotaeflora* var. *Eulaliae* Fern., l. c., 522, 1900 per specimen in Mexico prov. Chihuahua in montibus Sanctae Eulaliae dictis a Pringle (no. 659) lectum constituta est: typum in herb. Gray. vidi.

Frutex altitudine ad 1,5 m, ramulis pilis simplicibus minutis cinereo-vestitis, internodiis saepius 1—3 cm longis; foliorum laminis maximam partem habitu *Populi*. late deltoideo-ovatis, plerumque 2—5 cm longis subaequilatis, in apice obtusis vel breviter acuminatis, in basi late cordatis etiam late cuneatis, petiolis 0,5—1,5 cm longis elatis, margine grosse crenato-serrata, pagina superiore pallida molliter hirtella, inferiore pallidiore tomentella frequenter argentea rarius glabrata viride; floribus tribus in verticillastris bracteis tarde deciduis lanceolatis planis subtentis. glomerulis in spicis laxis 3—8 cm longis approximatis; calycibus florentibus 6,5—7 mm longis, extus cinereo-hirtellis, in maturitate 9—10 mm longis, labiae inferioris laciniis 3,5—5 mm latis; corollarum tubo 5 mm longo, labia superiore 4,5—5 mm alta, inferiore 4,5—6,5 mm longa, staminum connectivo cum antheris 6,5—8 mm longo.

Differs from *S. ballotaeflora* in the habit of the foliage and bracts but especially in the conformation of the corolla, the stamens being much straighter and actually longer. their position within the corolla being modified accordingly.

Texas: Franklin Mts; New Mexico: Otero: Sacramento Mts.; Fresnal Canyon, 5500 ft.; Dona Ana: Organ Mts., Burke Spring, Jornada Range Reserve; Grant: Burro Mts., 5500 ft.; Catron: Mogollon Mts., Mangas; Arizona: Greenlee: San Fran-

cisco Mts.; Graham: Blue River near Coopers Ranch, Gila Mts.; Pinal: Superstition Mt.; Pima: Robles Pass; Cochise: Mule Mts.; Mexico: Chihuahua: Balleza, 5800—6000 ft.; Santo Domingo: Sierra de Sta. Eulalia, 1850—1900 m; Cusihuiriachic.

10. **S. ballotaeflora** Benth. Lab. Gen. et Sp. 270, 1833 in DC. Prodr. 12, 313, 1848 per specim. in Mexico prov. Queretaro prope Toliman a Karwinski lectum constitua est; typum in herb. Mus. Monac. vidi. — *S. laxa* Benth. in DC. Prodr. 12, 313, 1848 per specim. in Texas a Berlandier (no. 2241) lectum constituta est; typum in herb. Kew., isotypos in herb. DC., Mus. Field., et Univ. Calif. (Los Angeles) vidi.

Frutex vel fruticulus sarmentosus altitudine ad 2 m ramulis pilis simplicibus minutis cinereo-vestitis, internodiis 1—6 cm longis; foliorum laminis maximam partem 1—3 cm rarius 3—4 cm longis, deltoideo-ovatis, in apice obtusis, in basi nunc truncatis nunc cuneatis, petiolis 3—12 mm longis elatis, margine crenulata vel subserrata, pagina superiore hirtella saepe subbullata, inferiore cinereo-tomentella; floribus 1—3 in verticillastris bracteis concavis ovato-acuminatis deciduis subtentis, glomerulis in spicis laxis 1—5 cm longis approximatis; calycibus florentibus 5—7 mm longis extus cinereo-hirtellis, in maturitate 8—10,5 mm longis, labiae inferioris laciniis 3,5—5 mm latis; corollarum tubo 4—6 mm longo, labia superiore 4—5 mm alta, inferiore 4,5—6,5 mm longa; staminum connectivo 5—6 mm longo.

The Mexican plants tend to be more dense and smaller throughout, with small deltoid leaves, truncate at the base. The flowers also are somewhat smaller. It is not impossible that two or perhaps three races are represented.

Texas: Goliad, Duval. Neueces, Hidalgo, Cameron. Travis, Gillespie, Hays, Comal, Bexar, Medina. Uvalde, Maverick, Dimmit, Val Verde; Mexico: Coahuila: Monclova; Saltillo; Chojo Grande; Parras; Lerios; Nuevo Leon: ad Galeana; Monterrey; Zacatecas: Sierra Potrero: Cedros, Concepcion del Oro; San Luis Potosi: Minas de San Rafael; Rio Verde; Las Toblas, 1000—1100 m; Hidalgo: Zimapan; Ixmiquilpan.

11. **S. cuspidata** R. et P., Fl. peruv. 1, 23, t. 40, 1798 per specim. in Peruvia in collibus Cheuchin a Dombey lectum constituta est; specimina certa in herb. Mus. Par., Boissier., DC. et Berol. vidi.

Frutex altitudine ad 1 m ramis pilis ramosis sparse flocosopubescentibus superne subglandulosis; foliorum laminis 2,5—3,5 cm longis, 1,5—2 cm latis, deltoideo-ovatis, subcoriaceis, in apice obtusis, in basi truncato-subcordatis, margine fere recta, irregulariter crenulata, pagina superiore subglabra subbullata, inferiore

cinereo-tomentella venis prominulis, petiolis 3—5 mm longis elatis: floribus tribus in verticillastris bracteis ovatis 3—4 mm longis caducis subtentis, glomerulis inter se 0,5—1,5 cm distantibus in spicis interruptis laxis saepe paniculatis dispositis; calycibus florentibus 5—5,5 mm longis in maturitate paulo auctis extus glanduloso-hispidis, labiis circiter 1,3 mm longis subaequilongis, superiore tricuspidata subspinulosa, inferioris laciniis acuminato-spinulosis; corollarum tubo 5 mm longo, intus nudo, leniter ventricoso. labia superiore 4—5 mm alta, inferiore circiter 8 mm longo.

Peruvia: Lima: prope San Domian, 2400—3000 m; prope Huamantanga et Purrochuca; Cheuchin; Llata, 7000 ped.

12. **S. Gilliesii** Benth.. Lab. Gen. et Sp. 265, 1833 et in DC. Prodr. **12**, 317. 1848 per specim. in Argentina prope Mendoza a Gillies lectum constituta est; specimina certa in herb. Kew., Gray. et Univ. Calif. (Los Angeles) vidi. — *S. Gilliesii* var. *glandulosa* Griseb.. Symb. Fl. Arg. 273, 1879 per specim. in Argentinae Prov. Jujuy ad Maimara a Lorentz et Hieronymus (no. 769) lectum constituta est; typum in herb. Univ. Goetting. vidi.

Frutex bellus altitudine ad 3 m interdum fragrans sarmentosus ramulis gracilibus pilis brevibus ramosis floccoso-pubescentibus mox glabris; foliorum laminis 2—4,5 cm longis, 12—22 mm latis, deltoideo-lanceolatis, in apice acutis, in basi truncato-cordatis, margine rectiuscula regulariter etiam dupliciter serrata, pagina superiore viride fere glabra. inferiore pilis ramosis minutis dense albo-tomentella; floribus 3—6 in verticillastris bracteis rotundato-ovatis caudatis 3—4 mm longis caducis saepe purpureis subtentis, glomerulis inter se 0,5—2 cm distantibus in spicis interruptis 5—15 cm longis dipositis; calycibus florentibus 4—6,5 mm longis extus pilis nunc ramosis floccosis nunc glandulosis extensis vestitis saepe purpureis. in maturitate magnitudine variis 5,5 ad 9 mm longis, labiis valde hiantibus, superiore rotundata saepius trimucronata 3—7 mm diametro, inferioris laciniis rotundato-ovatis mucronatis subaequilongis; corollarum caeruleארum tubo 4,5—6,5 mm longo leniter ventricoso intus nudo, labia superiore 4,5—5,5 mm alta, inferiore 6—8 mm diametro.

The two specimens reported herewith from Bolivia may be either peripheral forms of *S. Gilliesii* or may perhaps more properly be considered as species. The evidence is insufficient.

Bolivia: Uyuni. 3700 m: Cinti: Puca Khasa pr. Tacaquira: Argentina: Jujuy, Salta, Catamarca, Rioja, San Juan, Cordoba, Mendoza. San Luis; Chile: Antofagasta: El Rincon prope Paposo: Aguada Panulcito; Aguada de Miguel Diaz; in Cerro Perales prope Taltal.

13. **S. Lorentzii** Griseb. in Goett. Abh. 273. 1874 (Pl. Lorentzianae) per specim. in Argentinae prov. Cordoba ad oppidum Cordoba in convallibus barrancas dictis a Lorentz lectum constituta est; typum in herb. Univ. Goett., isotypum in herb. Mus. Berol. vidi.

Frutex ramosus altitudine ad 1 m ramulis gracilibus pilis brevibus ramosis canescentibus mox glabris; foliorum laminis 3—6 cm longis 1,5—2,5 cm latis, deltoideo-lanceolatis, interdum deltoideo-ovatis, in apice acutiusculis rarius obtusis, in basi truncato-cordatis, margine rectiuscula, regulariter serrata, juvenum paginis ambobus pilis ramosis molliter incano-tomentosis in maturitate superiore cinereo-viride; floribus 3—6 in verticillastris bracteis 5—6 mm longis ovato-acuminatis caducis subtentis, glomerulis densis inter se 0,5—1 cm distantibus, in spicas 4—7 cm longas confertis; calycibus florentibus 7—9 mm longis, extus pilis ramosis tomentosis et glandulis sessilibus conspersis, labia superiore rotundata 2—2,5 mm longa trimucronata, inferioris laciniis late ovatis breviter acuminatis, in maturitate non visis; corollarum tubo 7—9 mm longo intus nudo leniter ventricoso, labia superiore 7—8 mm alta, inferiore 10—12 mm longa.

Argentina: Cordoba: in Barrancas prope Cordoba; in Sierra Chica; Dique.

14. **S. chorianthos** Epl. in Rep. Spec. Nov., Beiheft 85, 57, 1935 per specim. in Boliviae prov. Santa Cruz prope Mairana a Steinbach (no. 8303) lectum constituta est; typum in herb. Stockh. vidi.

Frutex pulcher sarmentosus ramulis superne pilis ramosis interdum extensis glandulosis vestitis; foliorum laminis coriaceis oblongis, 2—3 cm longis, 6—12 mm latis, in apice obtusis, in basi rotundatis, juvenum revolutis, petiolis 2—6 mm longis elatis, margine crenulata, pagina superiore viride rugulosa pilis brevissimis nunc ramosis nunc simplicibus glandulosis vestita inferiore pilis ramosis albo-tomentella; floribus 1—3 in verticillastris bracteis membranaceis 4—5 mm longis caducis ovatis subtentis glomerulis inter se 0,5—1 cm distantibus in spicis interruptis 3—6 cm longis pilis nunc ramosis nunc simplicibus glandulosis vestitis dispositis, pedicellis 2—3 mm longis elatis; calycibus florentibus 12—13 mm longis in maturitate paulo auctis extus nunc pilis ramosis brevibus dense tomentellis nunc pilis glandulosis viscido-vestitis, labiis hiantibus superiore recurvo-erecta rotundato-acuminata, inferioris laciniis similibus 3,5 mm longis; corollarum atro-caerulearum tubo 20 mm longo sub labiam inferiorem ventricoso intus nudo, labia superiore 8—10 mm alta, inferiore 13 ad 14 mm longa.

The specimens of Weddell and D'Orbigny are almost identical. I have referred them to synonomy with Steinbach's plant despite the differences in pubescence, for in this group that character is a variable one.

Bolivia: Cochabamba; Cerro de Chuquisaca; Mairana, Santa Cruz, in aridis.

15. **S. retinervia** Briq. in Bull. Herb. Boiss. 4, 857, 1896 per specim. in Bolivia prope Chillon in Sierra de Santa Cruz a Kuntze lectum constituta est; typum mancum in herb. Delessert., isotypum in herb. horti bot. Nov. Eborac. vidi.

Frutex altitudine ad 1,5 m rarius pilis brevibus ramosis flocoso-tomentellis mox glabris; foliorum laminis 6—7 cm longis, 1,2—2.5 cm latis, vel ovato-lanceolatis vel oblongo-lanceolatis, obtusiusculis, in basi rotundatis, petiolis 1—1,5 cm longis floccosis elatis, margine crenato-serrata, pagina superiore rugosula subcorrugata fere glabra inferiore pilis brevissimis ramosis albo-tomentella; floribus tribus in verticillastris, glomerulis in spicis interruptis 5—8 cm longis dispositis; calycibus florentibus 8 mm longis, extus pilis brevibus ramosis tomentosis, in maturitate 11—12 mm longis, labia superiore rotundata ut videtur emarginata breviter mucronata, inferiore laciniis rotundata mucronata 3 mm longa; corollarum caerulearum tubo 12 mm longo leniter ventricoso intus nudo, labia superiore 9—10 mm alta, inferiore paulo longiore.

Bolivia: in Sierra Santa Cruz prope Chillon.

16. **S. calolophos** Epl. in Rep. Spec. Nov., Beiheft **85**. 57, 1935 per specim. in Argentinae prov. Salta in Campo Quijano prope Rosario de Lerma a Venturi (no. 8069) lectum constituta est; typum in herb. Mus. Smithson. vidi.

Herba verisimiliter perennis bella altitudine ad 70 cm ramulis pilis brevibus ramosis incanis; foliorum laminis 8—12 cm longis, 2,5—4 cm latis, deltoideo-lanceolatis, in apice acutis, in basi truncatis, margine fere recta, subdupliciter crenata, pagina superiore viride glabra, inferiore pilis brevibus ramosis dense incano-tomentella, petiolis 1—2 cm longis elatis; floribus 6 et ultra in verticillastris bracteis ovato-acuminatis 4—6 mm longis incanis caducis subtentis, glomerulis inter se 1—1,5 cm distantibus, in spicas interruptas caesio-incanas pulchras approximatis, pedicellis 2—3 mm longis elatis; calycibus florentibus 5 mm longis, extus pilis brevibus ramosis caesio-incanis, labia superiore rotundata trimucronata 1,5 mm longa, inferioris laciniis acutis aequilongis; corollarum caerulearum tubo 6 mm longo ventricoso, subtus infra medium papillis binis invaginato, labia superiore

6 mm alta. inferiore 8—9 mm longa; stylo superne pilis ramosis consperso.

Argentina: Salta: in Campo Quijano prope Rosario de Lerma. 1500 m.

17. **S. Bangii** Rusby in Mem. Torrey Cl. 4, 246, 1895 per specim. in Boliviae prov. Cochabamba prope Cochabamba a Bang (no. 980) lectum constituta est; typum in herb. horti bot. Nov. Eborac., isotypos in herb. Kew., Gray, Vindob., Smithson. et horti bot. Missour. vidi. — *S. erythradena* Briq. in Bull. Herb. Boiss. 4, 853, 1896 per specim. in Bolivia ad Rio Tapacari a Kuntze lectum constituta est: typum in herb. Delessert., isotypum in herb. horti bot. Nov. Eborac. vidi.

Frutex ramis ascendentibus ramulis pilis ramosis floccoso-pubescentibus et glandulosis; foliorum laminis 4—8 cm longis. 1—3 cm latis, oblongo-lanceolatis, in apice subacutis, in basi rotundato-truncatis, petiolis 6—12 mm longis elatis, margine fere rectis crenato-serrata, paginis ambobus pilis ramosis sparse pubescentibus inferiore glanduloso-punctata; floribus 3—6 in verticillastris bracteis ovato-attenuatis 5—12 mm longis deciduis subtentis, glomerulis inter se 1—2 cm distantibus; calycibus florentibus 5—6 mm longis extus pilis brevibus ramosis sparse floccosis et glandulis sessilibus punctatis, in maturitate 8 mm longis, labia superiore trimucronata, inferioris laciniis breviter acuminatis. pedicellis 3—4 mm longis elatis; corollarum pallide caerulearum tubo 8—10 mm longo, leniter ventricoso intus nudo, labia superiore 4.5—5 mm alta. inferiore 7—8 mm longa.

Bolivia: Rio Tapacari, 3000 m; Cochabamba; inter Oruro et Cochabamba.

18. **S. Humboldtiana** Dietr., Nachtr. Gaertn. Lex. 7, 419, 1821 per *S. pulchellam* Kunth, l. c., constituta est. — *S. pulchella* Kunth. in Humboldt et Bonpland, Voy., Nov. Gen. et Sp. Pl. 2. 288, t. 140, 1817 per specim. in Ecuador a Humboldt et Bonpland lectum constituta est; specim. verum in herb. Mus. Par. vidi (non DC., Cat. Hort. Monsp. 142, 1813.). — *S. spicata* Schult., Mant. 1, 202, 1822 per *S. pulchellam* Kunth, l. c., constituta est. — *S. Humboldtii* Spreng., Syst. 1, 64, 1825 per *S. pulchellam* Kunth, l. c., constituta est. — *S. saligna* Willd. ex A. Dietr., Sp. Pl. 1, 307, 1839 per specim. in Ecuador a Humboldt et Bonpland lectum constituta est: typum in herb. Willd. vidi.

Frutex pulcher ad 2,5 m altitudine ramulis pilis ramosis flocculoso-puberulis superne floccoso-tomentellis; foliorum laminis petiolis 1—3 mm longis elatis, 1,5—5,5 cm longis. 0,5—1.5 cm latis, mollibus, oblongo-ellipticis utrimque acutis, margine subintegra, pagina superiore griseo-viride puberula. inferiore

argentea pilis brevissimis ramosis dense tomentella; floribus 3—12 in verticillastris bracteis albo-tomentellis ovato-acuminatis 4—5 mm longis caducis subtentis, glomerulis in spicas 5—10 cm longas saepius approximatis rarius infimis inter se 1—3 cm distantibus; calycibus florentibus extus pilis ramosis dense tomentellis 3.5 ad 4 mm longis, in maturitate 5 mm longis, labia superiore recurva trimucronata, inferioris laciniis 1,5—2 mm longis acutis, pedicellis 2 mm longis elatis; corollarum caerulearum tubo 3,5 mm longo intus nudo.

Ecuador: Ibarra, 2000—2400 m: Ambato et Latacunga: prope Guallabamba; in arenosis siccis prope Pomasqui, 8000 ped.; ad Rio Chota.

19. **S. pruinosa** Fernald in Proc. Am. Acad. 35, 526, 1900 per specim. in Mexico prov. Jalisco inter Mesquitec et Monte Escobedo a Rose (no. 2601) lectum constituta est; typum in herb. Smithson., isotypum in herb. Gray. vidi.

Frutex ramis pilis ramosis brevibus et longioribus pruinoso-tomentellis internodiis plerumque 3—6 cm longis; foliorum laminis deltoideo-ovatis 3—5 cm longis, 2—3.5 cm latis, in apice obtusis, in basi rotundato-truncatis, petiolis 0.5—1 cm longis elatis, marginibus serrulatis, pagina superiore bullato-rugosa viride subglabra, inferiore pilis ramosis albo-tomentellis; floribus 6 et ultra in verticillastris bracteis caducis subtentis; glomerulis in spicas cylindratas 5—15 cm longas confertis; calycibus florentibus 4,5 mm longis, extus dense albo-tomentellis, in maturitate paulo auctis; corollarum tubo 5—5,5 mm longo, labia superiore 5 mm alta, inferiore 5,5 mm longa; ovulis dense pubescentibus.

Mexico: Jalisco: inter Mesquitec et Monte-Escobedo.

20. **S. Goldmanii** Fern. in Proc. Am. Acad. 35, 527, 1900 per specim. in Mexico prov. Chihuahua prope Batopilas a Goldman (no. 214) lectum constituta est; typum in herb. Gray., isotypum in herb. Smithson. vidi.

Frutex gracilis altitudine ad 2 m caulibus superne ramosis, ramis ascendentibus pilis ramosis longioribus et brevibus floccoso-tomentellis, internodiis plerumque 3—5 cm longis; foliorum laminis 5—8 cm longis, 2—4 cm latis, oblongo-ovatis, in apice obtusiusculis, in basi rotundatis, petiolis 0,5—2 cm longis elatis, pagina superiore glabrata pallide viride, inferiore pilis ramosis minutissimis incano-tomentella, margine crenulata; floribus 6 et ultra in verticillastris bracteis caducis subtentis, glomerulis in spicas interruptas fastigiatas 5—15 cm longas approximatis, infimis 1—2 cm distantibus calycibus florentibus extus dense floccoso-tomentellis 5 mm longis, in maturitate non visis; corolla-

rum tubo 6,5—7 mm longo, labia superiore 5—5,5 mm alta, inferiore 7—8 mm longa; ovulis densissime pubescentibus.

Mexico: Chihuahua, Batopilas 5500—6500 ft.; Sonora: Sierra Charuco, Rio Mayo, in pineto-quercetis; Sierra Chiribo in quercetis; Sierra Canelo, Rio Mayo in pineto-quercetis.

21. **S. fruticulosa** Benth., Lab. Gen. et Sp., Suppl. 721. 1835 et in DC. Prodr. 12, 315, 1848 per specim. in Mexico prov. Oaxaca circa oppidum a Andrieux (no. 151) lectum constituta est; typum in herb. Kew., isotypos in herb. DC., Monac., Mus. Vindob. et Univ. Calif. (Los Angeles) vidi. — *S. Conzattii* Fern. in Proc. Am. Acad. 35, 526, 1900 per specim. in Mexico prov. Oaxaca prope El Parian a Gonzalez et Conzatti (no. 902) lectum constituta est; typum in herb. Gray. vidi.

Fruticulus ramosus ramulis pilis ramosis floccoso-tomentellis ramorum cortice discedente internodiis 1—6 cm longis; foliorum laminis 1—4 cm longis 0.5—2.5 cm latis, maximam partem anguste ovatis vel oblongis etiam subdeltoideis, in apice obtusis, in basi rotundatis rarius subtruncatis, petiolis 0,5—1,5 cm longis elatis, pagina superiore bullato-rugosa viride subglabra, inferiore pilis ramosis cinereo-tomentellis, margine crenulata; floribus plerumque tribus in verticillastris bracteis deciduis subtentis, glomerulis approximatis in spicis interruptis 3—15 cm longis dispositis; calycibus 3—5,5 mm longis extus pilis ramosis dense floccoso-tomentellis in maturitate paulo auctis labiis brevibus ore subtruncato, pedicellis 1—2 mm longis elatis; corollarum tubo 5—6,5 mm longo, labia superiore 4—5 mm alta, inferiore 5—7 mm longa; ovulis densissime pubescentibus.

Mexico: Oaxaca: El Parian, 1200 m; Cerro de la Cruz, Nochixtlan, 2000 m; Cerro San Antonio, Frujano 1700 m; inter Tlaxiaca et Teposcolula.

22. **S. rubropunctata** Robins. et Fern. in Proc. Am. Acad. 30, 121, 1895 per specim. in Mexico prov. Sonora prope Huehuerachi a Lloyd (no. 451) lectum constituta est; typum in herb. Gray., isotypum in herb. Smithson. vidi.

Herba perennis altitudine ut videtur circiter 50 cm caulibus e caudice lignoso ascendentibus pilis ramosis minute et sparse conspersis vix tamen incanis; foliorum laminis ovato-oblongis 2—4 cm longis, in apice obtusis in basi rotundato-angustatis, nisi juvencum viridibus pilis ramosis sparsissime conspersis, superiore bullulata, petiolis 4—10 mm longis elatis; floribus paucis (?) 6 in verticillastris bracteis lanceolato-ellipticis planis deciduis 4—5 mm longis subtentis, glomerulis confertis; calycibus florentibus 6 mm longis extus pilis ramosis dense lanatis, labiis acuminatis;

corollarum tubo 6 mm longo, labia superiore 6 mm alta, inferiore paulo longiore; stylo in apice utrimque sparse hirsuto.

Mexico: Sonora: Huehuerachi.

23. **S. Parryi** Gray in Proc. Am. Acad. 8, 369, 1870 per specim. in Arizona prope Apache Springs, a Parry lectum constituta est; typum in herb. horti bot. nov. Eborac. vidi. — *S. spicata* Torr. in Bot. Mex. Bound. 131, 1858 per specim. idem constituta est (non R. et S.). — *S. confinis* Fernald in Proc. Am. Acad. 35, 523. 1900 per specim. in Arizona prope Ft. Huachuca a Lemmon (no. 2861) lectum constituta est; typum in herb. Gray. vidi.

Herba perennis altitudine 30—50 cm caudice lignoso caulibus ascendentibus praesertim in basi ramosis utrimque pilis minutissimis ramosis vestitis superne incanis, internodiis 2—4 cm longis; foiliorum laminis nunc deltoideis nunc oblongis vel ovato-lanceolatis, 1—4 cm longis 1—2 cm latis, in apice obtusiusculis in basi truncatis rarius rotundatis, margine crenulata, paginis ambobus pilis minutissimis ramosis albido-tomentellis, petiolis 0.5—4 mm longis elatis; floribus saepius 6 in verticillastris bracteis perstatis vel tarde deciduis 5—12 mm longis rotundato-acuminatis subtentis glomerulis subglobosis plus minusve confertis infimis inter se 1—2 cm distantibus, in spicis 5—15 cm longis interruptis dispositis; calycibus florentibus 4—5 mm longis extus pilis ramosis dense albo-lanatis, in maturitate 6—7 mm longis, labiis acuminatis; corollarum tubo 5—5,5 mm longo, labia superiore 3 mm alta, inferiore 5—6 mm longa; stylo nunc fere glabro nunc hirtello nec tamen dense piloso.

Arizona: Cochise: Lowell, Apache Springs; Santa Cruz: Ruby Road between Nogales and Pajarita Mts.; Sonora: 10 mi. N. of Magdalena; Fronteras. 4550 ft.; between San Pedro and Fronteras; red gravelly soil 20 mi. S.E. of Magdalena on the road to Cucurpe.

24. **S. candicans** M. et G. in Bull. Acad. Brux. 11, II, 61, 1844 per specim. in Mexico in prov. Puebla prope Tehuacan a Galeotti (no. 641) lectum constituta est; typum in herb. Mus. Brux. et isotypum in herb. Mus. Par. vidi.

Frutex pulcher ramosus ramulis pilis ramosis brevibus cinereo-tomentellis internodiis 2—6 cm longis; foliorum laminis paliformibus oblongis etiam ovatis 1,5—2,5 cm longis, 5—12 mm latis, in apice rotundatis vel obtusis, in basi abrupte truncatis, margine obscurissime crenulata subintegra, pagina superiore pallida subglabra, inferiore dense albo-tomentella, petiolis 5—15 mm longis elatis; floribus 3—6 in verticillastris bracteis caducis subtentis, glomerulis in spicas 3—7 cm longas confertis; calycibus florentibus 4—6 mm longis, extus dense albo-tomentellis, labiis

acutis; corollarum tubo 5,5—7,5 mm longo, labia superiore 4,5 ad 5,5 mm alta, inferiore 7—8 mm longa.

Mexico: Puebla: Tehuacan, 1900 m; inter Tehuacan et Esperanza, 2100 m; Cerro de Coatepl: San Luis Tultitlanapa: Vera Cruz: Acultzinco.

25. **S. Coulteri** Fern. in Proc. Am. Acad. **35**, 519, 1900 per specim. in Mexico prov. Hidalgo prope Zimapan a Coulter (no. 1120) lectum constituta est; typum in herb. Gray., isotypos in herb. Kew. et Univ. Calif. (Los Angeles) vidi.

Fruticulus ramis pilis ramosis brevibus et longioribus saepe simplicibus dense tomentosis; foliorum laminis paliformibus, oblongis etiam linearibus, plerumque 2—3 cm longis, 3—12 mm latis, in apice rotundatis in basi abrupte truncatis, petiolis 1—3 mm longis elatis, margine crenulata angustissime revoluta, pagina superiore pallida pilis brevibus ramosis puberula et longioribus conspersa, inferiore dense albo-tomentella; floribus tribus et ultra in verticillastris bracteis caducis subtentis, glomerulis in spicas 3—5 cm longas confertis; calycibus florentibus 6 mm longis extus pilis ramosis dense lanatis et frequenter longioribus glandulosis setaceis conspersis, labiis acuminatis; corollarum tubo 6,5 mm longo, labia superiore 5 mm alta, inferiore 6 mm longa.

Mexico: Zacatecas: El Potrero pr. Cedros; Hidalgo: Iximiquilpan, Zimapan.

4. Sect. Purpusiana.

Frutices intricate ramosi foliis oblongo-ovatis plus minusve palaeformibus bullulatis utrimque pilis brevibus saepe aureis viscidis; floribus oppositis in racemis brevibus dispositis bracteis parvis caducis subtentis; calycum labia superiore trimucronata 7-venis; corollarum caerulearum tubo intus nudo integro, labia inferiore quam superior longiore; staminibus inclusis, gubernaculo anguste deltoideo-oblongo in dentem assurgentem obscurum dilato: stylo glabri ramo postico longiore. Species una boreali-mexicana: *S. Purpusii*.

26. **S. Purpusii** Brandegee in Univ. Calif. Publ. Bot. **4**. 187. 1911 per specim. in Mexico prov. Coahuila in Cerro de Zapatero a Purpus (no. 4636) lectum constituta est; typum in herb. Univ. Calif. (Berkeley); isotypos in herb. Smithson. et Mus. Field. vidi.

Frutex intricate ramosus cortice discedente ramulis pilis extensis glandulosis vestitis; foliorum laminis oblongo-ovatis rarius deltoideo-ovatis, maximam partem 1—2 cm longis, in apice obtusis vel rotundatis, in basi truncato-cordatis, petiolis 1—4 mm longis elatis, marginibus crenatis ut videtur, parce revolutis, paginis pilis brevibus extensis glandulosis irrasis viscidis superiore rugossima;

floribus plerumque oppositis bracteis caducis subtentis in racemis brevibus viscidis 3—6 cm longis confertis dispositis; calycibus florentibus 8,5—9,5 mm longis extus viscido-irrasis, labia superiore trimucronata 7-venis tribus tamen prominulis, in maturitate latioribus; corollarum caerulearum tubo 8—10 mm longo, labia superiore 5 mm alta.

Mexico: Coahuila: Cerro de Zapatero.

5. Sect. **Cucullatae.**

Herbae perennes crassae insignes radicibus tuberosis foliis amplis petiolis cuneato-marginatis elatis; floribus compluribus in glomerulis globosis in spicis crassis strictis interruptis dispositis, bracteis rotundatis conspicuis perstatis subtentis; calycum labia superiore 7-venis tubum subaequante cucullata inferiore brevissima; corollarum atro-cyanearum tubo tubiforme intus nudo, labia inferiore quam superior duplo longiore patente, lacinia media lata ad basim albo-striata; staminibus in galea inclusis, gubernaculo in dentem assurgentem producto; stylo incrassato complanato postice piloso, ramo postico longiore, antico subdeltoideo. Species una mexicana: *S. clinopodioides*.

27. **S. clinopodioides** Kunth in Humboldt et Bonpland, Voy., Nov. Gen. et Sp. Pl. **2**, 294, t. 145, 1817 per specim. in Mexico prov. Michoacan, Patzcuaro et Aguasarco a Humboldt et Bonpland lectum constituta est; typum in herb. Mus. Par. vidi. — *S. parquerensis* Moc. et Sessé ex Benth., Lab. Gen. et Sp. 273, 1833 et in DC. Prodr. **12**, 322, 1848 per specim. in Mexico a Mocino et Sessé lectum constituta est; typum olim in herb. Lambert, hodie in herb. horti bot. Oxon., isotypum in horti bot. Matrit. vidi. — *S. patzquarensis* Sessé et Moc., Pl. Nov. Hisp. ed. 2, 8, 1893 et in Fl. Mex. ed. 2, 6, 1894; specimen ex herb. horti Matrit. vidi.

Herba perennis crassa radicibus tuberosis caulibus altitudine ad 1 m strictis erectis villosis, internodiis 4—6 cm longis; foliorum laminis 6—12 cm longis, 3,5—7 cm latis, ovatis, obtusis, in basi rotundatis et ad petiolos 1—6 cm longos longe marginatos cuneato-angustatis, margine serrato-crenata, pagina superiore hirsuta inferiore villosa; floribus compluribus in verticillastris bracteis rotundatis perstatis villosis 1—2,5 cm diametro subtentis, glomerulis globosis inter se 1—3 cm distantibus, in spicis interruptis erectis crassis 20—30 cm longis: calycibus florentibus circiter 10 mm longis, superne villosis, in maturitate sessilibus 16—20 mm longis, labia superiore 5—10 mm alta, cucullata, mucronata, inferiore 2,5—3,5 mm longa, laciniis subspinosis; corollarum atro-cyanearum tubo 13—14 mm longo, labia superiore 6 mm alta, inferiore 10 ad 12 mm diametro, patente.

Mexico: Chihuahua: 60 mi. south of Guadalupe y Calvo. 7500—8000 ft.; 65 mi. E. of Batopilas, 7000 ft.; Michoacan: Uruapan, 5000 ft., Morelia: Cerro Azul, 2300 m; Patzcuaro: Durango: Metates pr. Cueva, 2800—2900 m, in pinetis; Mexico: Temascaltepec, 2480 m.

6. Sect. **Fernaldia.**

Frutices insignes speciosi foliis ellipticis 10—20 cm longis breviter petiolatis; floribus 3—6 in verticillastris bracteis caducis subtentis in spicis interruptis dispositis; calycum labiis subaequilongis breviter spinulosis superiore 5—7-venis; corollarum albo-caerulearum tubo 18 mm longo, ventricoso, ad basim invaginato intus nudo, labia inferiore quam superior fere duplo longiore, lacinia media 15 mm lata: staminibus in galea inclusis, gubernaculo ad connexum in dentem acutum assurgentem producto; stylo postice atro-barbato, ramo postico longiore. Species mexicana una: *S. albo-caerulea.*

28. **S. albo-caerulea** Lind. in Belg. Hortic. 7, 199, 1857 per specim. e seminibus in Mexico prov. Michoacan in pinetis a Ghiesbreght lectis eductum constituta est: typum non reperire potui.

Frutex altitudine ad 4 m ramulis villosis et inter flores plus minusve glandulosis; foliorum laminis ellipticis 10—20 cm longis a medio utrimque angustatis interdum acuminatis, petiolis 0,5 ad 1 cm longis elatis, marginibus serrulatis, pagina superiore hirtella, inferiore cinereo-pubescente; floribus 3—6 in verticillastris bracteis caducis subtentis, glomerulis demum inter se 3—5 cm distantibus in spicis interruptis strictis 30—40 cm longis dispositis; calycibus florentibus extus glanduloso-hispidis 12—13 mm longis, in maturitate auctis, labia superiore saepius breviter trimucronata, 5—7-venis, ambobus subspinosis; corollarum albo-caerulearum tubo 18 mm longo, labia superiore 13 mm alta, inferiore 18 mm longa; styli margine postica pilis crassis dense barbata.

Mexico: Mexico: Temascaltepec; Cumbre-Cimientes in Alnetis; Morelos: Cuernavaca, 2100 m; Michoacan: Mt. Tancitaro, 2600—3100 m.

7. Sect. **Caducae.**

Herbae annuae erectae caducae foliis nunc deltoideis nunc ellipticis; floribus parvis bracteis acuminatis parvis deciduis subtentis; calycum labia superiore 7-venis, inferioris laciniis breviter acuminatis; corollarum tubo intus nudo, limbo caeruleo ad fauces albido-maculato; staminum in labia superiore inclusorum jugo geniculato in basi in dentem assurgentem dilatum producto; stylo

vel glabro vel in apice utrimque hirsuto, ramo postico longiore. Herbae mexicanae; species typica est *S. subincisa*.

Folia deltoidea 2—3.5 cm lata in basi truncata 30. *S. tehuacana*
Folia elliptico-oblonga 5—10 mm lata in basi cuneata . . . . 29. *S. subincisa*

29. **S. subincisa** Benth., Pl. Hartweg. 20, 1839 per specim. in Mexico prope Aguas Calientas a Hartweg (no. 160) lectum constituta est; typum in herb. Kew., isotypos in herb. Kew., Gray.. et horti bot. Nov. Eborac. vidi.

Herbae annuae erectae altitudine ad 40 cm ramis dichotomis ascendentibus hirtellis superne glandulosis, internodiis 3—10 cm longis; foliorum laminis oblongo-ellipticis etiam sublinearibus, acutis, in basi ad petiolos 1—3 cm longos hirtellos cuneato-angustatis, margine irregulariter inciso-serrata, crenis 1—3 mm altis assurgentibus; floribus saepius solitariis rarius 2—3 in verticillastris bracteis late ovatis 3 mm longis glanduloso-pilosis caducis subtentis, glomerulis inter se 1—3 cm distantibus; calycibus florentibus 4.5—5.5 mm longis, extus glanduloso-hispidis, in maturitate 7—8.5 mm longis, hiantibus; corollarum tubo 4—4,5 mm longo. labia superiore 2.5 mm alta. inferiore 7—8 mm longa; stylo glabro.

Arizona: Cochise. Pima, Greenlee, Yavapai, Santa Cruz: New Mexico: Mora. San Miguel, Lincoln, Grant, Socorro, Sierra. Catron. Dona Ana; Mexico: Chihuahua: Pacheco; Chihuahua: Colonia Garcia; Pilares; Sonora: Guadalupe Canyon, Nogales to Cocospera Ranch; Durango: Durango; Aguas calientes: Aguascalientes.

30. **S. tehuacana** Fern. in Proc. Am. Acad. 40. 53. 1905 per specim. in Mexico prov. Puebla prope Tehuacan in collibus a Pringle (no. 8587) lectum constituta est; typum in herb. Gray.. isotypos complures vidi.

Herbae annuae erectae altitudine ad 40 cm ramis dichotomis ascendentibus infima ad facies hirtellis et pilis longioribus extensis sparse vestitis superne glandulosis, internodiis 3—10 cm longis; foliorum laminis 2—4.5 cm longis, 2—3,5 cm latis, deltoideo-ovatis. obtusis, in basi rotundato-truncatis, petiolis 2—4 cm longis elatis, marginibus obscure serratis subsinuatis, paginis ambobus glabris nisi setis paucis conspersis: floribus 1—3 in verticillastris bracteis parvis caducis subtentis. glomerulis inter se 1—2 cm distantibus; calycibus florentibus 5,5 mm longis extus pilis glandulosis setaceis conspersis in maturitate 6,5 mm longis, labia superiore 7-venis: corollarum tubo 4,5 mm longo. labia superiore 2 mm alta, inferiore 7.5 mm longa; stylo hispidulo.

Mexico: Puebla: Tehuacan, 1800 m.

8. Sect. **Lavanduloideae.**

Herbae perennes caulibus erectis gracilibus saepe virgatis saepius e caudicibus lignosis tuberosis: foliis saepius ellipticis rarius ovatis breviter petiolatis in basi angustatis rarius rotundatis: floribus in spicas graciles nunc interruptas nunc compactas confertis bracteis deciduis subtentis: calycum labia superiore 3-venis: corollarum tubo cylindrato intus nudo, labia superiore hirsuta: staminibus pro rata parvis, in galea inclusis, gubernaculo oblongo-deltoideo integro quam filamenti pars superior duplo triplove longiore; styli sparse pilosi ramo superiore longiore plano inferiore excavato in apice truncato; gynobasis cornu quam ovula longiore. Plantae mexicanae; species typica est *S. lavanduloides*.

A section, the species of which differ chiefly in habit of inflorescence and minutiae of pubescence and calyx structure. It is accordingly difficult, particularly with the scant representations of several species, to furnish more than an approximate key.

Flores in spicis saepius interruptis vel strictis vel laxioribus dispositi
- Calyces maturi deflexi patentim nutantes; flores 1—6 (et ultra) in verticillastris dispositi; spicae laxiores
  - Herbae fere glabrae sat parvae foliis ad caulis basim approximatis, caulibus itaque subscaposis; flores 1—3 in verticillastris dispositi
    - Folia elliptico-oblonga etiam linearia subsessilia . . . . 32. *S. Teresae*
    - Folia ovata patentim petiolata . . 31. *S. scaposa*
  - Herbae erectae strictae foliis ad caules subaequaliter dispositis; flores plerumque 3—6 in verticillastris dispositi
    - Calycum labia inferior 1,5—2 mm longa: verticillastra inter se 0,5—4 cm distantia . . . . 33. *S. helianthemifolia*
    - Calycum labia inferior 1—1,5 mm longa; verticillastra inter se 2—10 mm distantia . . . . 34. *S. guadalajarensis*
- Calyces maturi ascendentes vel extensi vix deflexi; flores 6—12 in verticillastris inter se saepius 1—3 cm distantibus dispositi; spicae strictae (vide etiam *S. Agnes*)
  - Calyces maturi 6—7 mm longi . . . . 35. *S. moniliformis*
  - Calyces maturi vix 5 mm longi . . . . 36. *S. remota*

Flores in spicis sat confertis saepius compactis cylindratis dispositi (vide etiam *S. guadalajarensis*)
Calyces extus patentim hirsuti vel villosi
Calycum labiae vix 1 mm longi hirtis occlusae . . . . 37. *S. cryptodonta*
Calycum labiae saepius 1,5—2 mm longae apertae
Folia subtus glabrata infima ovata; calyces dense villosi . . . . 38. *S. stricta*
Folia subtus pubescentia omnia oblongo-elliptica; calyces hirsuti . . . . . . 39. *S. longifolia*
Calyces extus saepius appresso-hirtelli
Plantae chihuahuanae foliis laevibus spicis laxioribus floribus subnutantibus 40. *S. muscarioides*
Plantae australes foliis saepius praesertim subtus venuloso-reticulatis spicis compactis rarius subinterruptis floribus vel extensis vel ascendentibus . . . 41. *S. lavanduloides*
Plantae Jalisco etiam Sinaloa et Durango foliis ovato-ellipticis fere glabris: spicae cylindratae laxiores . . . . . . 42. *S. Agnes*

31. **S. scaposa** Epling sp. nov. per specim. in Mexico prov. Mexico ad Temascaltepec prope Nanchititla a Hinton (no. 5332) lectum constituta est; typum in herb. Univ. Calif. (Los Angeles), isotypum in herb. Kew. vidi.

Herba perennis singularis caulibus paucis erectis gracilibus 25—40 cm altis e caudice lignoso tuberoso glabris; foliis ad caulis basem approximatis, laminis ovatis, 1,5—3 cm longis, obtusis, in basi saepius ad petiolos 8—20 mm longos angustatis, marginibus subintegris, paginis ambobus glabris; floribus nutantibus 1—3 in bractearum caducarum axillis dispositis, pedicellis 2,5—3 mm longis elatis, in racema 4—8 cm longa vel spica laxa ad scapi gracilis nudi 20—30 cm alti apicem instructis: calycibus florentibus 5—6 mm longis extus praesertim ad venas appresso-hispidulis, labiis circiter 1,5 mm longis, in maturitate 6,5—7 mm longis; corollarum tubo 6 mm longo, labia superiore 2,5 mm alta.

Mexico: Mexico: Temascaltepec: Manchititla.

32. **S. Teresae** Fern. in Proc. Am. Acad. **35**, 506, 1900 per specim. in Mexico prov. Nayarit prope Sanctae Teresae vicum a Rose (no. 2233) lectum constituta est; typum in herb. Gray., isotypum in herb. Smithson. vidi.

Herba perennis caulibus paucis gracillimis e caudice lignoso tuberoso ascendentibus sparse appresso-hispidulis vel glabris 12 ad 40 cm altis; foliis in caulis parte inferiore dispositis, laminis oblongis vel lineari-ellipticis 1,5—4 cm longis, 3—7 mm latis, in apice acutiusculis, infra medium ad petiolos subnullos angustatis, marginibus integris glabris vel sparsissime appresso-hispidulis: floribus nutantibus pedicellis 1—2,5 mm longis elatis, 1—3 in bractearum caducarum axillis dispositis vel in racema vel in spica laxa 3—12 cm longa ad caulis subscaposi apicem instructis: calycibus florentibus 5—6 mm longis ad venas sparse et minute appresso-hispidulis, labiis 1—1,5 mm longis: corollarum tubo 5—7 mm longo, labia superiore 2,5—3 mm alta.

Mexico: Nayarit: Santa Teresa.

33. **S. helianthemifolia** Benth., Lab. Gen. et Sp. 254. 1830 et in DC. Prodr. 12, 304, 1848 per specim. in Mexico prov. Michoacan prope Tlalpujahua a Graham (no. 90) lectum constituta est: typum in herb. Kew. vidi. — *S. helianthemifolia* var. β Benth., l. c., per specim. in Mexico prope San Martin a Graham (no. 99) lectum constituta est: typum in herb. Kew. vidi.

Herba perennis altitudine 40—80 cm caulibus paucis e caudice lignoso ascendentibus plerumque pilis recurvis pubescentibus internodiis mediis 3—10 cm longis: foliorum laminis plerumque ellipticis 2—5 cm longis, 1—2 cm latis, infimis plus minusve ovatis, in apice saepius obtusis in basi ad petiolos 3—10 mm longos angustatis, margine crenato-serrata vel integra, paginis ambobus pubescentibus interdum glabratis; floribus deflexis nutantibus 3—6 et ultra in verticillastris bracteis parvis caducis subtentis, glomerulis infimis inter se 1,5—4 cm distantibus supremis confertis in spicis interruptis demum 15—30 cm longis dispositis; calycibus florentibus 5,5—6,5 mm longis, extus pilis appressis hirtellis, in maturitate paulo auctis; corollarum tubo 4—5 mm longo, labia superiore 2 mm alta, inferiore 6 mm diametro.

Mexico: Hidalgo: Sierra de Pachuca, 3500 m; inter Pachuca et Mineral del Chico, 2500—2700 m; Real del Monte; Mexico: El Oro, 3000 m; Montes de la Gavia, in pineto, 2900 m; San Luis Potosi: 2000—2500 m; Alvarez, 2100—2300 m: Jalisco: Guadalajara: Michoacan: Tlalpuhajua; Mexico: Temascaltepec: Crucero-Agua Blanca in Abietis.

34. **S. guadalajarensis** Briq. in Ann. Conserv. et Jard. bot. Genève 2, 132, 1898 per specim. in Mexico prov. Jalisco in collibus siccis saxosis prope Guadalajara a Pringle (no. 4624) lectum constituta est; typum in herb. Deless., isotypos in herb. Kew., Univ. Goett. et Univ. Calif. (Berkeley) vidi.

Herba perennis altitudine ad 1 m caulibus elongatis superne ramosis ramis strictis appresso-hirtellis internodiis mediis 3—6 cm longis; foliorum laminis ovato-ellipticis 2—3,5 cm longis, 10 ad 12 mm latis, in apice acutiusculis in basi saepius rotundatis, petiolis 2—3 mm longis elatis, margine obscure crenato-serrata, paginis ambobus glabris vel sparse hirtellis: floribus plerumque tribus in verticillastris bracteis parvis caducissimis subtentis, pedicellis extensis gracilibus 4,5—5 mm longis elatis, glomerulis in spicas laxas subinterruptas 8—15 cm longas approximatis: calycibus florentibus extus appresso-hirtellis 5 mm longis, in maturitate paulo auctis deflexis nutantibus laciniis circiter 1,5 mm longis; corollarum tubo 5 mm longo, labia superiore 2,5 mm alta, inferiore 4—5 mm longa.

Mrs. Mexia's plant from Guerrero is very similar but with smaller flowers.

Mexico: Jalisco: Sierra de San Esteban prope Guadalajara. 1500 m; Rio Blanco; ? Guerrero: Reyes: Sierra Madre del Sur ad Petlacala in pinetis (floribus minoribus).

35. **S. moniliformis** Fern. in Proc. Am. Acad. 45, 418, 1910 per specim. in Mexico prov. Puebla in monte ignivomo Ixtaccihuatl a Purpus (no. 1720) lectum constituta est; typum in herb. Gray., isotypos in herb. Smithson., Mus. Field. et Univ. Calif. (Berkeley) vidi.

Herba perennis elongata virgata altitudine ad 1 m et ultra (?) superne longe ramosa ramis strictis pilis appressis cinereo-pubescentibus, internodiis mediis 8—15 cm longis; foliorum laminis 4—8 cm longis, 8—20 mm latis, elliptico-lanceolatis, in apice acutis vel obtusis, in basi ad petiolos 2—6 mm longos angustatis, margine serrulata, pagina superiore hirtella, inferiore incano-pubescente; floribus 6—12 et ultra in verticillastris densis bracteis ovato-attenuatis 5—7 mm longis hirsutis caducis subtentis, glomerulis in spicis interruptis strictis incanis demum 20—30 cm longis dispositis, supremis confertis, mediis gradatim approximatis infimis ad 12 cm remotis; calycibus florentibus 4—4,5 mm longis extus incano-hirsutis, in maturitate 5,5—7 mm longis ascendentibus, laciniis 1,5—2 mm longis acutissimis; corollarum tubo 3 mm longo, labia superiore 1,5 mm alta, inferiore 3,5 mm longa.

Strongly suggests either a mature form of *S. stachyoides* in which the inflorescence has elongated, or else a form very similar with an elongate, interrupted-spicate inflorescence; pubescence and habit are very similar.

Mexico: Puebla: Ixtaccihuatl in pinetis, 2500—3000 m.

36. **S. remota** Benth. in DC. Prodr. **12**, 304, 1848 per specim. in Mexico a ignoto (? Hegewitsch) lectum constituta est; typum in herb. horti Petropol. non vidi.

Herba perennes gracilis superne ramosis ramis strictis appresso-pubescentibus, internodiis 1—6 cm longis; foliorum laminis ellipticis 1,5—2.5 cm longis 4—6 mm latis in apice acutis in basi ad petiolos 2—3 mm longos angustatis. marginibus crenato-serrulatis pagina superiore hirtella. inferiore pubescente; floribus plerumque 3—7 in verticillastris bracteis caducis parvis subtentis. in spicis interruptis tenuibus 8—15 cm longis. 10 ad 12 mm diametro dispositis. glomerulis infimis 1—3 cm distantibus supremis confertis; calycibus florentibus extus sericeo-incanis saepius caeruleis vix 4—5 mm longis in maturitate paulo auctis; corollarum tubo 3—3,5 mm longo, labia superiore 1.5 mm alta. inferiore 3,5 mm diametro.

I am by no means assured that the species here assigned is that of Bentham, the type of which I have not seen. It is very similar in aspect to *S. lavanduloides* from which it differs chiefly in the smaller flowers and elongated and interrupted-spicate inflorescence.

Mexico: Morelos: prope Cuernavaca in montibus Tres Marias. 3000—3200 m; Mexico: Amecameca.

37. **S. cryptodonta** Fern. in Proc. Am. Acad. **35**, 507, 1900 per specim. in Mexico prov. Durango a Rose (no. 2338) lectum constituta est; typum in herb. Gray., isotypum in herb. Smithson. vidi.

Herba perennis habitu *S. lavanduloides* caulibus appresso-hirtellis internodiis 3—8 cm longis; foliorum laminis oblongis, 3—5 cm longis, 9—14 mm latis, in apice obtusis in basi ad petiolos breves 2—3 mm longos angustatis supremis sessilibus, marginibus obscure crenato-serratis, pagina superiore hirtella, inferiore pubescente incana; floribus 6 et ultra in verticillastris bracteis caducis subtentis, in spicis cylindratis laxis dispositis; calycibus florentibus 5 mm longis extus incano-hirsutis in maturitate non visis, labiis vix 1 mm longis pilis villosis densis occultis; corollarum tubo 5 mm longo, labia superiore 2,5 mm alta. inferiore 4,5 mm diametro.

Mexico: Durango.

38. **S. stricta** Sessé et Moc., Pl. Nov. Hisp. ed. 2, 8. 1893 et Fl. Mex. ed. 2, 7, 1894 per specim. in Mexico ab auctoribus lectum constituta est; specim. verum in herb. horti bot Matr. vidi. — *S. elongata* Kunth in Humboldt et Bonpland, Voy., Nov. Gen. et Sp. Pl. **2**, 287, t. 139, 1817 per specim. in Mexico prov. Michoacan, inter Ario et Aguasarco a Humboldt et Bonpland lectum

constituta est; typum in herb. Mus. Par. vidi (non Salisb. Prodr. 74, 1796).

Herba perennis erecta virgata altitudine ad 80 cm, caulibus pilis appressis hirsutis internodiis mediis 3—15 cm longis; foliorum laminis 3—7 cm longis, 1,5—3,5 cm latis, maximam partem ellipticis infimis plus minusve ovatis in apice acutis obtusisve, in basi ad petiolos 4—10 mm longos angustatis, utrimque fere glabris ad venas hirtellis, margine crenato-serrata, floribus sex et ultra verticillastris bracteis ovato-attenuatis 4—6 mm longis villosis caeruleis deciduis subtentis, glomerulis in spicas densas demum cylindratas 2—6-(—15) cm longas, infimas interdum 1—4 cm remotas pedunculis elongatis elatis; calycibus florentibus 5 mm longis extus pilis longioribus villosis, in maturitate paulo auctis; corollarum tubo 4,5 mm longo, labia superiore 2 mm alta, inferiore 4 mm longa.

Similar in inflorescence to *S. stachyoides* but darker blue and villous, rather than hirsute with appressed hairs; habit more nearly of *S. helianthmifolia*.

Mexico: Vera Cruz: inter Las Vegas et San Miguel; Mexico: Sierra Ajusco, 3200 m; Sierra de las Cruces, 3000 m; Temascaltepec, 2880 m; in Desierto Viejo; Michoacan: Tlalpujahua: Morelos: Tres Marias; Toro; Zempoala.

39. **S. longifolia** Willd., Sp. Pl. 1, 141, 1797 per specim. in Mexico in montibus frigidis prope Los Ioares et Santa Rosa de la Sierra a Humboldt et Bonpland (no. 4267) lectum constituta est; typum in herb. Willd. vidi. — *S. stachyoides* Kunth in Humboldt et Bonpland, Voy., Nov. Gen. et Sp. 2, 287, t. 138, 1817 per specim. in Mexico in montibus frigidis prope Los Ioares et Santa Rosa de la Sierra a Humboldt et Bonpland (no. 4267) lectum constituta est; typum in herb. Mus. Par. vidi.

Herba perennis altitudine 40—80 cm, caulibus paucis erectis virgatis pilis appressis vestitis, internodiis mediis 5—8 cm longis: foiliorum laminis ellipticis 3—6 cm longis, 15—20 mm latis, in apice obtusis, in basi ad petiolos 5—10 mm longos attenuatis, margine serrulata, paginis ambobus cinereo-pubescentibus; floribus ascendentibus 6—12 in verticillastris bracteis caducis ovato-attenuatis 5—7 mm longis pubescentibus subtentis, glomerulis in spicas cylindratas compactas 5—8 cm longas confertis; calycibus florentibus 4,5—5 mm longis extus incano-hirsutis, in maturitate 6—7 mm longis, laciniis acutissimis 2 mm longis; corollarum tubo 3.5 mm longo, labia superiore 2 mm alta, inferiore 3.5 mm longa.

Distinguishable from the more robust southern forms of *S. lavanduloides* chiefly by the more coarsely hirsute calyces, in

this regard more like *S. elongata*. It may be that those plants are in reality *S. longifolia*. The material available does not warrant such a conclusion, however.

Oaxaca: prope Oaxaca, 2500—3000 m.

40. **S. muscarioides** Fernald in Proc. Am. Acad. 35. 506, 1900 per specim. in Mexico prov. Chihuahua in radicibus montis Mohinora prope Guadalupe y Calvo a Nelson (no. 4850) lectum constituta est: typum in herb. Gray., isotypum in herb. Smithson. vidi.

Herba perennis altitudine 40—65 cm caulibus gracilibus e caudice lignoso ascendentibus sparse appresso-hirtellis internodiis 3—10 cm longis; foliorum laminis 4—6 cm longis, 7—10 mm latis, elliptico-oblongis, in apice acutiusculis, in basi ad petiolos obscuros 2—3 mm longos angustatis supremis sessilibus, marginibus subintegris obscure serrulatis, paginis ambobus fere glabris laevibus: floribus 6—12 in verticillastris bracteis parvis caducis subtentis in spicis interruptis laxis pedunculis 15—25 cm longis elatis dispositis; calycibus florentibus 4 mm longis extus sparse hirtellis fere glabris, in maturitate paulo auctis; corollarum tubo 4,5 mm longo, labia superiore 2—2,5 mm alta, inferiore 4—5 mm diametro.

Differs from *S. lavanduloides* chiefly in the more lax inflorescence and more glabrous habit; hardly separable from that complex.

Mexico: Chihuahua: Mt. Mohinoro; Sierra Choruco: Rio Juerte ("a solitary widely distributed species in the cooler pine belt" — apparently this).

41. **S. lavanduloides** Kunth in Humb. et Bonpl., Voy., Nov. Gen. et Sp. Pl. 2, 287, 1817 per specim. in Mexico prov. Michoacan ad oppidum Patzcuaro in lacus litore a Humboldt et Bonpland lectum constituta est; typum in herb. Mus. Par. vidi. — *S. Humboldtiana* Schultes, Mant. 1, 183, 1822 per specim. idem constituta est. — *S. lavandulaefolia* Spreng., Syst. 1, 58, 1825 per specim. (?) idem constituta est (non Vahl).

Herba perennis erecta altitudine ad 1 m et ultra caulibus saepius superne ramosis, ramis strictis elongatis utrimque appresso-hirtellis; foliorum laminis maximam partem 3—9 cm longis interdum in formis australibus longioribus plerumque oblongo-ellipticis vel obtusis vel acutis in basi ad petiolos saepius 3—4 mm longos gradatim angustatis, marginibus obscure serrulatis, paginis ambobus pubescentibus inferiore pallidiore etiam cinerea reticulato-rugosa, rarius fere glabris; floribus circiter 12 in verticillastris bracteis ovato-attenuatis caducis subtentis in spicas cylindratas compactas magnam partem 12 ad 17 mm diametro (corollis exclusis) rarius 20 mm, 3—12 cm longas longe pedunculatas confertis, pedicellis saepius circiter 2 mm

longis elatis; calycibus florentibus 4—5.5 mm longis rarius in formis australibus in maturitate 7 mm longis, extus appresso-hirtellis: corollarum tubo 3,5—4,5 mm longo, labia superiore 2—2,5 mm alta, inferiore 3—5 mm diametro.

As interpreted here, this species embraces a complex which varies from region to region. These variants are ill-defined, however. and considering the plasticity of the subsection, seem hardly of sufficient order for segregation. The typical form, as seen in Michoacan, Mexico, Puebla and Oaxaca, is characterized by oblong or elliptical leaves mostly 3—6 cm long, borne on petioles 3—8 mm long, both surfaces mostly pubescent. The spikes are dense, mostly solitary and the mature calyces measure from 4—6 mm. The diameter of the spikes, corollas excluded, is mostly 12—15 mm. Such fairly typical forms occur also in Jalisco, Chiapas and Guatemala. Ranging from Chiapas and Guatemala to Honduras (Tuerckheim 493, Seler 2147, 2157, Ghiesbreght 741, Heyde et Lux 4395. Seler 2085, Standley 56003, 55843), and apparently also collected near Temascaltepec by Hinton, is a more robust form, taller, with somewhat longer leaves and petioles. The flowers are larger and the mature calyces measure 6—7 mm. The spikes are usually 15—20 mm in diameter. In Chiapas and Guatemala are forms differing from the typical, chiefly in the smaller foliage, 2—3 cm long, the more diffuse habit and the short, even subglobose spikes (Gomez 823, Heyde et Lux 3128, Bequaert 4, Ghiesbreght 738). These are similar in many ways to plants collected in Durango and Sinaloa (Palmer 115, Ortega 4713, 5354). The latter, however. have stems which are crisp-pubescent with somewhat coarser hairs and looser spikes which are panicled.

Mexico: Mexico: in collibus prope Ozumba, 2800 m; Morelos: Cuernavaca, 2500 m: Puebla: Ixtaccihuatl, 3000 m; Cerro de Santa Maria de Zacatepec, 2500 m; Michoacan: Patzcuaro; Mt. Patamban, 2500—3300 m; Morelia; Cerro Cejocote prope Morelia; Torres el Alto prope Uruapan in pineto; Jalisco: inter San Sebastian et Mascota; San Sebastian in pinetis; Guerrero: Jaxco, 1700 m: Oaxaca: Cuyamecalco, 2200 m; San Bernardino, 2000 m: Juquila, 2000 m; Chiapas: Cerro del Boqueron; in pinetis Pueblo Nuevo; Iztapa inter Huitztan et Oxchuc; Mt. Ovando; Guatemala: Antigua (Sacatepequez); Volcan de Fuego; Casillas (Santa Rosa) 1200 m; Santa Rosa (Baja Verapaz) 1500 m: Santiago (Sacatepequez) 2200 m; Chimaltenango, 2000 m: Sacabaja (Quiche) 1200 m; Honduras: Siguatepeque in pineto, 1080—1400 m.

42. **S. Agnes** Epling sp. nov. per specim. in Mexico prov. Jalisco prope Real Alto a Mexia (no. 1582*a*) lectum constituta est: typum in Univ. Calif. (Los Angeles), isptypos plures vidi. —

S. lavanduloides Kunth var. *latifolia* Benth. in DC. Prodr. 12. 303. 1848 per specim. in Mexico prov. Jalisco ad Bolanos a Hartweg (no. 171) lectum constituta est; typum in herb. Kew., isotypum in herb. horti bot. Nov. Eborac. vidi.

Herba perennis erecta altitudine 40—60 cm et ultra superne plus minusve ramosis ramulis appresso-hirtellis; foliorum laminis maximam partem ovato-ellipticis 3—5 cm longis in apice saepius obtusis in basi rotundatis vel cuneato-angustatis petiolis 3—15 mm longis elatis, marginibus serrulatis, paginis ambobus saepius glabris nisi ad venas hirtellis, inferiore pallidiore; floribus magnam partem 6 in verticillastris bracteis ovatis caducis subtentis in spicas cylindratas vix tamen compactas saepe ternatas plus minusve confertis; calycibus florentibus 4—5,5 mm longis extus appresso-hirtellis; corollarum tubo 3,5—4,5 mm longo, labia superiore 2 ad 2,5 mm alta, inferiore 3—5 mm diametro.

Perhaps not separable from *S. lavanduloides*, but apparently of different habit and aspect, as well as distinctive range. The plants of each region: Durango, Jalisco and Nayarit-Sinaloa, differ somewhat in aspect.

Durango: Sianori. 800 m; Metates ad Cueva, 2800—2900 m; El Salto, Asseraderos, 2500—2550 m; Nayarit: Sierra del Nayarit; Sinaloa: San Ignacio de la Nevada, 1150 m; Jalisco: Mascota. Real Alto, 2500 m; Bolanos.

9. Sect. **Sigmoideae.**

Herbae perennes vel suffrutices interdum arbores parvae foliis breviter petiolatis saepius subsessilibus; floribus nunc 1—6 in verticillastris in spicis interruptis elongatis gracilibus saepius paniculatis nunc in cymulis dichotomis pedunculatis ample paniculatis dispositis; bracteis parvis plerumque deciduis interdum perstatis; calycum extus hispidulorum rarius glandulosorum labiis brevibus superioribus 5—7-venis; corollarum tubis sat ventricosis ad bases saepe invaginatis semper intus rugis binis ornatis; staminum in in galea inclusorum gubernaculo deltoideo-oblongo ad connexum in dentem assurgentem dilato: styli sparse setosi ramo postico longiore, antico sigmoideo; gynobasis cornu quam ovula paulo longiore.

Plantae mexicanae praesertim in montibus occidentalibus incolunt. Species typica est *S. nepetoides*.

Flores 1—12 in verticillastris interrupto-spicatis saepius paniculatis dispositi (*Eusigmoideae*)
  Herbae perennes caulibus paucis e caudice lignoso 30—60 cm ascendentibus

Petioli 2—6 mm longi quam laminae multo breviores . . . . 43. *S. platyphylla*

Petioli 5—10 mm longi laminarum dimidia parte breviores . . . . 44. *S. crucis*

Herbae perennes vel suffrutices erectae magnam partem 1 m altae et ultra; spicae paniculatae; calyces maturi circiter 6 mm longi

Folia glabrata solum ad venas setosa: calyces glabri; caules valde setosi horridi . . . 46. *S. dryophila*

Folia subtus molliter pubescentia saepius cinerea (*S. quercetorum* excepta)

Folia lanceolata glabrata 12—15 mm lata 49. *S. quercetorum*

Folia saepius ovata interdum ovato-lanceolata subtus pubescentia magnam partem 20—40 mm lata

Caules superne et calyces pilis extensis circiter 1 mm longis plus minusve capitato-glandulosis vestiti saepe viscidi 45. *S. nepetoides*

Caules superne et calyces pilis plus minusve crispis pubescentes vix glandulosi nullomodo viscidi

Paniculorum rami magnam partem 5 ad 8 cm longi; glomerula ad ramulorum apices approximata inter se 2—10mm distantia . . . . 50. *S. inconspicua*

Paniculorum rami magnam partem 10 ad 30 cm longi; glomerula inter se saepius 8—15 mm distantia et ultra

Panicula stricta; foliorum margines plerumque convexae; calyces florentes 5—6 mm longi . . . . . 48. *S. chapalensis*

Panicula laxiora; foliorum margines saepius rectis; calyces florentes circiter 4 mm longi . . . . 47. *S. alamosana*

Flores in cymulis dichotomis ample paniculatis pedunculatis dispositi (*Cymulosae*)

Folia cordata 3—3.5 cm lata . . . . . . 52. *S. chalarothyrsa*

Folia ovato-lanceolata 1—2 cm lata

Corollarum tubi 4 mm longi . . . . . 53. *S. dasycalyx*

Corollarum tubi 6 mm longi . . . . . 51. *S. thyrsiflora*

Eusigmoideae.

43. **S. platyphylla** Briq. in Ann. Conserv. et Jard. bot. Genève 2, 150, 1898 per specimen in Mexico prov. Jalisco in collibus prope Guadalajara a Pringle (no. 2560) lectum constituta est; typum in herb. Deless., isotypos complures vidi. —*S. palmae* Epl. in Jones, Contrib. West. Bot. No. 18, 52, 1935 per specimen in Mexico prov. Jalisco prope La Palma a Jones (no. 380) lectum constituta est; typum in herb. Coll. Pomonae: isotypum in herb. Smithson. vidi.

Herba perennis caulibus paucis ascendentibus e caudice lignoso altitudine 30—60 cm inter folia pilis extensis sparse villosis et superne inter flores brevibus hispidulis: foliorum laminis ovatis vel deltoideo-ovatis plerumque 3—5 cm longis, in apice obtusis, in basi maximam partem truncatis petiolis 2—6 mm longis elatis, marginibus crenato-serratis, paginis ambobus sparse villosis; floribus 3—6 in verticillastris bracteis caducis subtentis glomerulis inter se 1—4 cm distantibus in spicis interruptis laxis saepius solitariis pedunculatis 10—30 cm longis dispositis: calycibus florentibus extus hispidulis 5.5—6.5 mm longis; corollarum tubo 6 mm longo, labia superiore 3 mm alta.

Mexico: Jalisco: Guadalajara: Rio Blanco in quercetis: La Palma; Calabazos.

44. **S. crucis** sp. nov. per specim. in Mexico prov. Durango prope Cruz de Piedra a Pennell (no. 18260) lectum constituta est: typum in herb. Smithson. vidi.

Herba perennis caulibus ut videtur e caudice lignoso ascendentibus 30—40 cm altis, superne inter flores pilis appressis indutis infime sparse villosis; foliorum laminis magnam partem 2—3 cm longis, deltoideo-ovatis, in apice obtusis in basi plus minusve truncatis, petiolis gracilibus laminarum dimidia parte brevioribus, marginibus crenato-serratis; paginis ambobus sparse villosis; floribus plerumque tribus in verticillastris bracteis caducis subtentis in spicis interruptis 15—20 cm longis dispositis, glomerulis inter se 1—4 cm distantibus; calycibus florentibus 4.5—5 mm longis, extus sparse hispidulis; corollarum tubo 5 mm longo ad basim leniter invaginato et rugis parvis ornato, labia superiore 4 mm alta, inferiore 9 mm diametro.

Durango: Cruz de Piedra, 2440—2450 m; Sinaloa: Cerro de la Sandia ad Panuco ad marem pacificam spectans, 1700—1900 m in pinetis.

45. **S. nepetoides** Kunth in Humboldt et Bonpland, Voy., Nov. Gen. et Sp. Pl. 2, 299, t. 150, 1817 per specimen in Mexico a Humboldt et Bonpland lectum constituta est; typum in herb. Mus. Par. vidi.

Suffrutex altitudine 60—80 cm et ultra, caulibus erectis superne ramosis pilis extensis longioribus plus minusve capitato-glandulosis vestitis, internodiis 2—8 cm longis; foliorum laminis ovatis 3—10 cm longis 1,5—5,5 cm latis, in apice acutis vel acuminatis in basi rotundatis et saepe subcordatis, petiolis 3—8 mm. longis elatis, margine crenato-serrata, pagina superiore saepe bullato-rugosa, glabra, inferiore pubescente vel glabrata, venis prominulis lacunoso-reticulatis; floribus 1—6 in verticillastris bracteis caducis parvis subtentis, glomerulis inter se 0,5—3 cm distantibus in spicis interruptis elongatis ascendentibus 10—45 cm longis dispositis; calycibus florentibus extus hispidulis vel capitato-glandulosis 4,5—5,5 mm longis, in maturitate paulo auctis, labiis obtusis, pedicellis 2,5—4 mm longis elatis; corollarum tubo 4—5,5 mm longo, labia superiore 2—3,5 mm alta, inferiore 6—9 mm longa.

Mexico: Mexico: Temascaltepec: Ipericones, Tenajac, 1690 m; Morelos: Cuernavaca, 2200—2500 m: Michoacan: Morelia: Rincon, 1900 m; Cerro Azul, 2100 m.

46. **S. dryophila** Epling sp. nov. per specimen in Mexico prov. Mexico in regione Temascaltepec in Cumbre de Tejupilco a Hinton (no. 5406) lectum constituta est; typum in herb. Univ. Calif. (Los Angeles), isotypum in herb. Kew. vidi.

Suffrutex altitudine 2—4 m., caulibus superne pilis longissimis extensis setosis inter flores subglabris; foliorum laminis 5—10 cm longis ovatis supra medium acuminatis in apice acutissimis, in basi rotundatis et plus minusve cordatis, petiolis setosis 0,5—2 cm longis elatis, marginibus obscure serrulatis, paginis ambobus viridibus subglabris solum ad venas plus minusve setosis; floribus 1—3 in bracteorum parvorum lanceolatorum perstatorum axillis dispositis, in paniculis diffusis 40—60 cm longis ramis gracilibus arcuatis dispositis, glomerulis inter se 0,5—1,5 cm distantibus; calycibus florentibus 5—5,5 mm longis extus fere glabris solum as venas sparsissime appresso-hispidulis; corollarum tubo 5—5,5 mm longo, labia superiore 3—3,5 mm alta, inferiore duplo longiore.

Mexico: Mexico: Temascaltepec.

47. **S. alamosana** Rose in Contrib. U. S. Nat. l. Herb. 1, 110. 1891 per specimen in Mexico prov. Sonora in montibus ad Alamos a Palmer (no. 345) lectum constituta est; typum in herb. Smithson., isotypos in herb. Kew. et Gray. vidi.

Herba perennis gracilis erecta altitudine ad 1 m et ultra superne ramosa caulibus et ramis sparse extenso-pubescentibus internodiis plerumque 3—8 cm longis; foliorum laminis anguste deltoideis etiam deltoideo-ovatis 4—8 cm. longis, 2—3,5 cm

latis, in apice obtusis vel acutiusculis, in basi subtruncatis, petiolis 2—5 mm longis elatis, margine crenato-serrata, paginis ambobus viridibus, superiore hirtella, inferiore pallidiore pubescente; floribus 3—6 et ultra in verticillastris bracteis parvis caducis subtentis, glomerulis inter se 0,5—4,5 cm distantibus in spicis interruptis gracillimis laxis 5—45 cm longis paniculatis dispositis; calycibus florentibus 4 mm longis extus hispidulis labiis acutis, in maturitate vix 5 mm longis; corollarum tubo 4—5,5 mm longo, labia superiore 2,5—3 mm alta, inferiore 7,5 mm diametro.

Gentry has the following note concerning a specimen collected on Rio Mayo, Sonora: „Upper Sonoran; oak swale, tolerant slope. Perennial 4 or 5 feet tall. Scattered on the steep slope in the huge boulders.“ I suspect that the whole group is associated with oaks.

Mexico: Sonora: Alamos; Pinal in Sierra Charuco; Rio Mayo in Sierra La Chuna; Sinaloa: Culiacan, Cerro Colorado; Durango: Tamazula: La Bajada 300 m.

48. **S. chapalensis** Briq. in Ann. Conserv. et Jard. bot. Genève 2, 145. 1898 per specimen in Mexico prov. Jalisco in montibus ad lacus Chapala a Pringle (no. 4351) lectum constituta est; typum in herb. Deless., isotypos complures vidi.

Suffrutex altitudine ad 1 m et ultra caulibus strictis superne ramosis ramis pubescentibus internodiis 2—6 cm longis; foliorum laminis ovatis, 2,5—6 cm longis, 15—35 mm latis, in apice obtusis, in basi rotundatis infimis interdum subcordatis, marginibus sat convexis, crenulato-serratis, pagina superiore viride hirtella bullato-rugosa, inferiore pallidiore pubescente interdum incana venis prominulis, petiolis 3—8 mm longis; floribus 3—6 in verticillastris bracteis parvis deciduis subtentis glomerulis inter se 0,5—2 cm distantibus in spicis interruptis elongatis strictis 15—45 cm longis ascendentibus paniculatis dispositis; calycibus florentibus extus hispidulis 5—6 mm longis in maturitate 6 ad 7,5 mm longis, labiis breviter acuminatis hiantibus, pedicellis 2—3 mm longis elatis; corollarum tubo 4,5 mm longo, labia superiore 3 mm alta, inferiore 5,5 mm longa.

Mexico: Jalisco: Chapala.

49. **S. quercetorum** Epling sp. nov. per specim. in Mexico prov. Jalisco in quercetis prope Real Alto a Mexia (no. 1583) lectum constituta est; typum in herb. Univ. Calif. (Los Angeles), isotypos in herb. Smithson. et Acad. Sci. Calif. vidi.

Suffrutex erectus odorus altitudine ad 1 m caulibus gracilibus superne ramosis hirtellis, internodiis 3—5 cm longis; foliorum laminis elliptico-lanceolatis 3—5 cm longis, 10—15 mm latis, in apice acutis, in basi ad petiolos 2—5 mm longos rotundato-angustatis, paginis ambobus glabratis, inferiore pallidiore, margine

serrulata; floribus 1—3 in verticillastris bracteis parvis caducis subtentis, glomerulis inter se 0,5—2 cm distantibus in spicis interruptis elongatis 10—30 cm longis ascendentibus paniculatis dispositis; calycibus florentibus extus hispidulis 5—6 mm longis, in maturitate 6.5—7.5 mm longis, labiis breviter acuminatis hiantibus, pedicellis 2—3 mm longis elatis: corollarum tubo 4,5—5,5 mm longo, labia superiore 3 mm alta, inferiore 5,5—6 mm longa.

Mexico: Jalisco: Real Alto in quercetis, 2500 m. Mascota.

50. **S. inconspicua** Benth., Lab. Gen. et Sp. 247. 1833 et in DC. Prodr. **12**, 298. 1848 per specim. in Mexico a Haenke lectum constituta est: typum mancum in herb. Kew., isotypos in herb. Mus. Regni Bohem. et in Univ. Calif. (Los Angeles) vidi. — *S. elongata* Mart. et Gal. in Bull. Acad. Brux. **11**, II, 75. 1844 per specimen in Mexico in valle Oaxaca ad Rincon a Galeotti (no. 712) lectum constituta est; typum in herb. Mus. Brux., isotypum in herb. Deless. vidi (nec Kunth nec Torrey). — *S. protracta* Benth in DC. Prodr. **12**. 309. 1848 per *S. elongatam* Mart. et Gal., loc. cit.. constituta est. *S. multiramea* Fern. in Proc. Am. Acad. **35**, 525, 1900 per specim. plura praesertim in Mexico prov. Oaxaca lecta constituta est; specimen normale Pringle (no. 6013) in herb. Gray. designo.

Suffrutex altitudine ad 1.5 m ramulorum internodiis 2—5 cm longis; foliorum laminis ovato-lanceolatis 3—6 cm longis, 12—25 mm latis. in apice acutis. in basi rotundatis etiam subcordatis, petiolis 5—8 mm longis elatis, margine serrato-crenata. pagina superiore bullato-rugosa viride hirtella. inferiore pubescente frequenter incana; floribus tribus in verticillastris pedicellis 3 ad 4 mm longis elatis bracteis parvis caducissimis subtentis, glomerulis laxis approximatis in paniculis hispidulis sat diffusis ramis arcuatis magnam partem 5—8 cm longis dispositis; calycibus florentibus 4—5 mm longis extus hispidulis, in maturitate paulo auctis labiis obtusis: corollarum tubo 5—6 mm longo, labia superiore 2—3 mm alta. inferiore 6—9 mm diametro.

Mexico: Oaxaca: Rincon ad Oaxaca; Reyes, 1600—2200 m; Cerro de la Virgen; El Encinal, Cuijamecalco, 1800 m; Oaxaca. 2000 m; Guerrero: pr. Taxco. supra castellum La Mulata, 1500 m; Chilpancingo 3000 m; inter Ayotzinapa et Petatlan, 1600 ad 2200 m.

Cymulosae.

51. **S. thyrsiflora** Benth., Bot. Voy. Sulph. 151. 1844 et in DC. Prodr. **12**, 316, 1848 per specim. in Mexico verisimiliter prope Tepic a Barclay lectum constituta est; typum in herb. Kew. vidi.

Frutex vel arbuscula altitudine ad 5 m (fide Mexia), ramulis superne sparse villosis, internodiis 5—10 cm longis; foliorum laminis

2—6 cm longis, 1—2 cm latis, ovato-lanceolatis, in basi rotundatis in apice acutis, pagina superiore viride, bullato-rugosa, hirtella, inferiore incano-tomentosa, margine crenulata, petiolis 3—4 mm longis elatis; floribus bracteis vel tarde deciduis vel perstatis 2—4 mm longis lanceolatis subtentis, in cymulis dichotomis pedunculis 5—10 mm longis elatis in thyrsis speciosis 15—30 cm longis etiam paniculatis dispositis; calycibus florentibus extus viscido-glandulosis sordidis 5,5 mm longis, in maturitate paulo auctis, labiis breviter acuminatis, pedicellis 1—1,5 mm longis sat crassis elatis; corollarum tubo 6 mm longo, labia superiore 4 mm alta, inferiore 8 mm longa.

Mexico: Nayarit: Tepic; Jalisco: inter Mascota et San Sebastian; San Sebastian, 1500 m: Michoacan: Mt. Tancitaro; Los Fresnos, 1850 m; Rio Zunipinito prope Uruapan; Coru, 2000 m; Morelia; San Miguel prope Morelia, 2200 m; Patzcuaro.

52. **S. chalarothyrsa** Fernald in Proc. Am. Acad. 43, 65, 1907 per specim. in Mexico prov. Jalisco in collibus circa Tuxpan a Pringle (no. 8856) lectum constituta est; typum in herb. Gray., isotypos complures vidi.

Suffrutex ut videtur superne late ramosus ramis pilis extensis superne glandulosis conspersis, internodiis 5—10 cm longis: foliorum laminis 4—6 cm longis, 3—3,5 cm latis, pulchre cordatis, acuminatis, margine crenato-serrata paginis ambobus hirsuto-villosis venis subtus prominulis ad 1,5 cm longis elatis; floribus bracteis lanceolatis 3—5 mm longis perstatis subtentis in cymulis laxissimis pedunculis gracilibus 1—2 cm longis elatis in paniculis amplis diffusis instructis; calycibus florentibus extus glanduloso-hispidis 5 mm longis, in maturitate paulo auctis, labiis breviter acuminatis, pedicellis 2—3 mm longis elatis: corollarum tubo 4 mm longo, intus ad basim papillis duobus ornato, labia superiore 3,5 mm alta, inferiore 8 mm longa.

Mexico: Jalisco: in collibus circa Tuxpan, 1200 m.

53. **S. dasycalyx** Fern. in Proc. Am. Acad. 45, 421. 1910 per specim. in Mexico prov.? Guerrero in Sierra Madre a Langlassé (no. 779) lectum constituta est; typum in herb. Gray., isotypum in herb. Smithson. vidi.

Suffrutex altitudine 1,5 m ramulis sparse villosis internodiis sat elongatis; foliorum laminis oblongo-lanceolatis 3—6 cm longis, in apice acutis in basi rotundato-angustatis; petiolis 2—3 mm longis elatis, paginis ambobus sparse villosulis fere glabris, marginibus serrulatis; floribus bracteis tarde deciduis lanceolatis subtentis in thyrsis dispositis; calycibus florentibus hirsutis 3—3,5 mm longis; corollarum tubo 4 mm longo labia superiore 3 mm alta.

Very similar to *S. thyrsiflora* but smaller in all its parts.
Mexico: (?)Guerrero.

10. Sect. **Punctatae.**

Subsect. *Punctatae* Epl. in Rep. Spec. Nov., Beiheft **85.** 58. 1935. Species typica est *S. punctata.*

Suffrutices foliis sat magnis ovatis vel ellipticis coriaceis saepius glabris interdum pubescentibus; floribus in spicis interruptis viscidis dispositis, bracteis caducis subtentis; calycum labia superiore 7-venis obtusa saepius obscure trimucronata inferioris laciniis paulo brevioribus acutis; corollarum nunc flavo-albidarum nunc atro-caerulearum tubo ventricoso nullomodo invaginato intus nudo, labia inferiore paulo longiore; staminibus in labia superiore galeata inclusis, gubernaculo oblongo in dentem assurgentem dilato; stylo dorsaliter villoso. Plantae peruvianae.

Corollarum tubi 15—16 mm longi . . . . . 54. *S. Pavonii*
Corollarum tubi 8—11 mm longi . . . . 55. *S. punctata*

54. **S. Pavonii** Benth., Lab. Gen. et Sp. 278, 1833 et in DC. Prodr. **12.** 326, 1848 per specim. in Peruvia a Pavon lectum constituta est; typum olim in herb. Lambert., hodie in herb. horti bot. Oxon. vidi.

Suffrutex erectus ramulis dense glanduloso-punctatis et superne glanduloso-villosis; foliorum laminis coriaceis 2,5—4.5 cm longis, 1—2 cm latis, ovato-ellipticis, in apice acutis, in basi rotundato-angustatis, petiolis 3—10 mm longis elatis, margine maximam partem integra interdum subserrata, paginis ambobus glabris glanduloso-punctatis; floribus 6—12 in verticillastris bracteis rotundato-ovatis breviter acuminatis minute glandulosis caducis ciliolatis 5—6 mm longis subtentis, glomerulis demum inter se 1—2 cm distantibus in spicas interruptas 8—12 cm longas confertis; calycibus florentibus 6 mm longis, extus dense glandulosis, labia superiore trimucronata, inferioris laciniis acutis, in maturitate 8—9 mm longis, pedicellis 3—5 mm longis glandulosis elatis; corollarum albidarum (? lutearum) tubo 15—16 mm longo ventricoso intus nudo, labia superiore 5—6 mm alta, inferiore paulo longiore.

S. punctatae varietas?

Peruvia: sine loco.

55. **S. punctata** R. et P., Fl. peruv. 1, 27, t. 39. 1798 per specim. in Peruvia e prov. Huanuco in collibus altis prope Huanuco a Ruiz et Pavon lectum constituta est; non typum sed icon vidi.

Suffrutex ut videtur ramis ramulisque villosis; foliorum laminis 3—6 cm longis, 1,5—4 cm latis, ovatis, obtusis, in basi

rotundatis petiolis 8—16 mm longis villosis elatis, margine crenato-serrata, paginis ambobus sparse villosis, inferiore pallidiore, venulosa; floribus 3—6 in verticillastris bracteis ovato-acuminatis, 3—4 mm longis glandulosis caducis subtentis glomerulis demum inter se 1—3 cm distantibus in spicas interruptas glanduloso-villosas graciles 10—25 cm longas dispositis: calycibus florentibus 5 mm longis, extus hispido-glandulosis, labia superiore trimucronata, inferioris laciniis acutis, in maturitate 8—9 mm longis, pedicellis 3—5 mm longis glanduloso-villosis elatis; corollarum tubo nunc albarum nunc pallide violacearum 8—11 mm longo, ventricoso, intus nudo, labia superiore 4—6 mm alta, inferiore subaequilonga.

The specimen here described corresponds closely with the published description and drawing of Ruiz and Pavon yet in no herbaria have I seen any similar Pavon plants. Those at Paris most nearly approximate this: all apparently are of the following variety. It is possible that two species are represented.

Peruvia: ad Cani prope Mito in declivitatibus apricis fruticosis, 8500 ped.; Huanuco.

var. **glabra** Epl. in Rep. Spec. Nov., Beiheft 85, 58, 1935 per specim. in Peruvia a Ruiz et Pavon lectum constituta est: typum olim in herb. Lambert, hodie in herb. horti bot. Oxon. vidi. — *S. punctata* Benth., Lab. Gen. et Sp. 277, 1833 et in DC. Prodr. 12, 326, 1848 per specim. idem constituta est.

Suffrutex diffusus altitudine ad 1 m et ultra ramis ramulisque glabris nisi nodis hirsutis dense glanduloso-punctatis; foliorum laminis 1,5—5 cm longis, 7—25 mm latis, vel ellipticis vel ovatis, nunc utrimque obtusis nunc acutis, coriaceis, utrimque glabris glanduloso-punctatis, margine subserrata interdum integra: corollis interdum atrocyaneis.

Peruvia: in collibus aridis prope Huanuco, 9000—10,000 ped.: Mito, 9000 ped.; Tomaiquichua ad Ambo, 8500 ped.; in fruticetis prope Huanuco, 10,500 ped.: prope Huariaca in declivitatibus fruticosis.

11. Sect. **Corrugatae.**

Salvia sect. *Calosphace* subsect. *Longiflorae Corrugatae* Benth. in DC. Prodr. 12, 327, 1848 per species tres constituta est; species typica est *S. corrugata*. — *Salvia* sect. *Calosphace* subsect. *Longiflorae Luteae* Benth., op. cit. p. 326, per species sex constituta est: species typica est *S. lutea*.

Frutices foliis nunc deltoideis nunc lanceolatis sat parvis coriaceis pagina superiore bullulato-rugosissima, inferiore reticulato-venulosa plus minusve incano-pubescente; floribus in spicis interruptis viscidis dispositis bracteis parvis caducis subtentis:

calycum labia superiore 7-venis obtusa saepius obscure trimucronata. inferioris laciniis paulo brevioribus acutis; corollarum nunc albido-flavidarum nunc atro-caerulearum tubo ad basim valde invaginato ventricoso. labia inferiore paulo longiore: staminibus in labia superiore galeata inclusis. gubernaculo in dentem assurgentem dilato; stylo dorsaliter villoso. Plantae boreali-andinae.

Folia oblongo-lanceolata 6—12 cm longa . . 57. *S. corrugata*
Folia nunc deltoidea nunc ovata 0,8—5 cm longa
  Folia 8—12 mm longa deltoidea . . . . . 58. *S. styphelus*
  Folia 2—5 cm longa anguste ovata in apice saepius rotundata
    Folia subtus albo-tomentosa; corollae extus glandulis sessilibus aureis conspersae . . 56. *S. ochrantha*
    Folia subtus villosa vix tomentosa; corollae nec glandulis sessilibus conspersae . . 59. *S. bullulata*

56. **S. ochrantha** Epling nom. nov. per specim. idem constituta est. — *S. lutea* Kunth in Humboldt et Bonpland. Voy., Nov. Gen. et Sp. Pl. 2. 297, t. 148. 1817 per specim. in Ecuador prov. Loja inter urbem Loja et montem Saraguru a Humboldt et Bonpland lectum constituta est; typum in herb. Mus. Berolin., isotypum in herb. Mus. Par. vidi (non Linn.. Sp. Pl. 26, 1753).

Frutex ramosus ramis pubescentibus; foliorum laminis 1,5 ad 4 cm longis, 1—2 cm latis, ovatis, nunc obtusis nunc acutiusculis, in basi rotundato-truncatis subcordatis. margine crenata, pagina superiore viride bullato-rugosissima bullis hirtellis, inferiore molliter incano-tomentosa, petiolis 8—15 mm longis villosis elatis; floribus 3—6 in verticillastris bracteis ovatis 3—4 mm longis caducis subtentis. glomerulis inter se 1—2 cm distantibus in spicis interruptis 8—20 cm longis dispositis; calycibus florentibus 5—5,5 mm longis, extus glanduloso-hispidis et glandulis sessilibus conspersis, in maturitate 8 mm longis, labia superiore mucronata, inferioris laciniis acutis mucronatis, pedicellis 4—5 mm longis elatis; corollarum albarum vel flavidarum extus glandulis sessilibus aureis conspersarum tubo 13 mm longo ad basim invaginato ventricoso. labia superiore 6 mm alta, inferiore 6—7 mm longa.

Ecuador: in monte Saraguru; inter Loja et montem Saraguru; inter Nabon et Ona, 1800—2700 m.

57. **S. corrugata** Vahl. Enum. 1. 252, 1805 per specim. in Ecuador verisimiliter a Jos. Jussieu lectum constituta est; vel typum vel isotypum in herb. Jussieu. vidi. — *Sphacele Gaudichaudii* Briq. in Ann. Conserv. et Jard. Bot. Genève 2, 182, 1898 per

specim. in Ecuador „prope Guayaquil" a Gaudichaud lectum constituta est; typum nequissimum sterilem in herb. Delessert. vidi. — *Alguelagum Gaudichaudii* Briq. loc. cit., (nomen).

Frutex aromaticus altitudine ad 3 m ramulis dense lanatis mox subglabris, internodiis ramulorum principalium 5—10 cm longis, ramulorum lateralium 0,5—1 cm longis; foliorum laminis 6—12 cm longis, 1,5—3 cm latis, oblongo-lanceolatis acutis obtusisve, in basi rotundato-truncatis, margine crenato-serrata, pagina superiore subglabra, bullato-rugosissima, inferiore villosa vel lanata, petiolis 0,5—1,5 cm longis elatis; floribus 6—12 in verticillastris bracteis 5—10 mm longis supremis ovatis deciduis infimis subfoliosis subtentis, glomerulis in spicas cylindratas 3—8 cm longas confertis; calycibus florentibus extus viscido-lanatis 6 mm longis, in maturitate 9—10 mm longis, labia superiore 7-venis obtusa, inferioris laciniis acuminatis brevioribus, pedicellis 2—3 mm longis elatis; corollarum atro-caerulearum tubo 11—13 mm longo ad basim valde constricto-invaginato ventricoso, labia superiore 7—8 mm alta, inferiore 6—9 mm longa.

Colombia: El Cauca: in fruticetis infra Pitayo, in convalle Rio Palo, Tierra Adento, 2500 m; ad Popayan in declivitatibus occ. Paramo Guanaco, 2700—3000 m; Ecuador: inter Ona et Cuenca, 2700—3000 m; prope Canar; in decliv. occ. montis Chimborazo, 3000 m; ad Cusatagua prope Ambato: in montibus Chuguinibamba: Riobamba; Quimia: Loja; Peruvia: Amazonas: Chachapoyas: Piura: supra Palambla; Huancabamba, 2700—2800 m.

58. **S. styphelus** Epling nom. nov. — *S. radula* Epl. in Rep. Spec. Nov., Beiheft **85**, 60, 1935 per specim. verisimiliter in Peruvia a Lobb (no. 296) lectum constituta est; typum in herb. Kew., isotypum in herb. Univ. Cantabr. vidi (non Benth. in DC. Prodr. **12**, 291, 1848).

Frutex ramis hispido-villosis, internodiis ramulorum lateralium 1—3 mm ramulorum principalium 1—3 cm longis; foliorum laminis sat crassis deltoideo-ovatis 8—12 mm longis, 6—9 mm latis, petiolis 1—3 mm longis villosis elatis, in apice obtusiusculis, in basi truncatis, margine crenata subrevoluta fere recta, pagina superiore bullulato-rugosissima fere glabra, inferiore incano-tomentosa; floribus 1—3 in verticillastris bracteis ovatis 1—2 mm longis caducis subtentis, glomerulis inter se 2—5 mm distantibus in spicas breves saepe laterales approximatis; calycibus florentibus extus glanduloso-villosis 8 mm longis, labia superiore 7-venis obtusa subtrimucronata, inferioris laciniis acutis paulo brevioribus, pedicellis 3 mm longis elatis; corollarum caerulearum tubo 13 ad 15 mm longo.

Peruvia: sine loco.

59. **S. bullulata** Benth. in DC. Prodr. **12**, 327, 1848 per specim. in Peruviae prov. Amazonas prope Chachapoyas a Mathews (no. 2132) lectum constituta est; typum in herb. Kew., isotypos in herb. Mus. Brit. et Smithson. vidi. — *S. pustulata* Benth. in DC. Prodr. **12**, 327, 1848 per specim. in Peruviae prov. Amazonas prope Chachapoyas a Mathews (no. 1529) lectum constituta est: typum in herb. Kew. vidi.

Frutex ramis dense hispido-villosis; foliorum laminis maximam partem anguste ovatis 2—4,5 cm longis, 10—20 mm latis, in apice rotundatis vel obtusis, in basi maximam partem truncato-subcordatis etiam rotundato-angustatis, margine convexiore crenulata, pagina superiore bullulato-rugosissima in bullis hispidula, inferiore hispido-villosa venis valde reticulato-elevatis, petiolis hispidis 6—10 mm longis elatis; floribus circiter tribus in verticillastris bracteis caducis ovatis 2 mm longis subtentis, glomerulis inter se 0,5—1 cm distantibus in spicas interruptas hispidas glandulosas confertis; calycibus florentibus 7 mm longis extus hispido-glandulosis, labia superiore trimucronata 7-venis, inferioris laciniis acutis paulo brevioribus, in maturitate non visis, pedicellis 2 mm longis elatis; corollarum ? purpurearum tubo 13 mm longo ad basim constricto-invaginato superne ampliato, labia superiore 7 mm alta, inferiore 7—8 mm longa.

Comparison of different specimens of the type numbers show these proposed species to be the same.

Peruvia: Amazonas: Chachapoyas.

12. Sect. **Discolores.**

Subsect. *Discolores* Epl. in Rep. Spec. Nov., Beiheft **85**. 87. 1935. Species typica est *S. discolor*.

Herbae perennes foliis coriaceis anguste ovatis integris valde discoloribus subtus densissime minutissime albo-tomentellis; floribus 3—9 in verticillastris, bracteis caducis subtentis in spicis interruptis dispositis: calycibus pro magnitudine florum grandibus subcampanulatis labiis obtusis inferiore fere integra superiore 7-venis: corollarum atro-caerulearum tubo in calyce incluso crasso sub labiam inferiorem constricto intus ad medium rugis binis transversis ornato, labia inferiore duplo longiore; staminibus in labia superiore galeata inclusis, gubernaculo subintegro; stylo glabro. Species una peruviana: *S. discolor*.

60. **S. discolor** Kunth in Humboldt et Bonpland, Voy., Nov. Gen. et Sp. Pl. **2**, 394, 1817 per specim. in Peruviae montibus obumbratis in convalle amoena fluvii Huancabamba a Humboldt et Bonpland (no. 3500) lectum constituta est: typum in herb. Mus. Berolin., isotypum in herb. Mus. Par. vidi.

Herba perennis altitudine ad 50—60 cm caulibus paucis e caudice lignoso ascendentibus tomento albo densissimo obtectis superne fere glabris ut videtur viscidis; foliorum laminis coriaceis 3—6 cm longis, 12—25 mm latis, oblongo-ovatis, in apice obtusis, in basi rotundatis, petiolis 7—13 mm longis elatis, marginibus integris, pagina superiore glabra viride, inferiore tomento albo densissimo minutissimo cretata; floribus 3—9 in verticillastris bracteis ovato-lanceolatis acuminatis 6—10 mm longis subfoliosis caducis subtentis, glomerulis demum inter se 2—6 cm distantibus; calycibus florentibus extus pilis brevissimis ramosis albidis intus glabris, chartaceis, 12—16 mm longis, labiis obtusissimis 5—7 mm longis, in maturitate 25—26 mm longis, pedicellis gracilibus 3—4 mm longis elatis; corollarum atro-caerulearum tubo crasso ventricoso sub labiam inferiorem constricto 13—14 mm longo, intus ad medium rugis binis transversis ornato, labia superiore 7—9 mm alta, inferiore 9—11 mm longa.

Peruvia: in valle fluminis Huancabamba.

13. Sect. Uliginosae.

Subsect. *Uliginosae* Epl. in Rep. Spec. Nov., Beiheft 85, 52, 1935. Species typica est *S. uliginosa.*

Herbae perennes nunc prostratae nunc erectae radicibus frequenter incrassatis caulibus paucis saepius e caudice lignoso assurgentibus pilis extensis longioribus saepe conspersis; bracteis deciduis vel perstatis; calycibus extus pilis brevibus frequenter glandulosis sparse hispidulis interdum pilis longioribus dense vestitis et saepius glandulis perlucidis sessilibus conspersis, labia superiore trimucronata rarius subintegra 5—7-venis; corollarum caerulearum tubo sat ventricoso intus nudo, rarius ad basim rugis binis perobscuris invaginato labia superiore saepius glandulis sessilibus punctatis inferiore ad basim albo-maculata; staminum in galea inclusorum jugo geniculato et gubernaculo in dentem assurgentem dilato; stylo in apice complanato incrassato postice (utrinque *S. villosae*) piloso, rarius glabro ramo superiore longiore, inferiore deltoideo, gynobasis cornu incrassato trilobato ovula subaequante. Plantae modo brasilienses modo mexicanae a Virginia et Tennessee usque ad Uruguay et Argentina disseminatae sunt.

This section is formed of a complex of species, each variable within limits such as to render specific differentiation difficult. The differentiae which are most useful are those which are least determinable by reference to herbarium specimens: summations of differences in habit of growth and the nature of the subterranean parts. In most respects, for example, *S. Forreri*, *S. arizonica*,

S. glechomaefolia. and *S. setulosa*, are very similar. They apparently differ in the average stature, the degree to which the leaves are disposed in the lower parts of the plant and the nature of the stem proper ie. whether thickened and woody or slender and creeping and whether the roots become thickened and tuberous. There is little to distinguish *S. glechomaefolia* and *S. Forreri*, save in this last respect. The leaves of the former are generally blunt and bluntly toothed and the stems arise from a woody caudex. The leaves of the last, at least in Durango, are sharp, shortly and coarsely toothed, and the stems are apparently slender, shortly creeping and the roots form tuberous thickenings. But to determine the extent to which even these differentiae are constant, is impossible from the available material.

Two series of forms may be recognized in the section: one in which the tendency is toward an obovate or ovate (even rotund) leaf with petioles mostly less than 1 cm long: *S. nana*, found from Durango and San Luis Potosi to Guatemala, the others largely localized in Central Mexico: *S. assurgens*, *S. prunifolia*, *S. tricuspidata*, *S. veronicaefolia*. *S. firma*, and *S. Lozani*. The second series ranges from the S. E. United States to Central Mexico: *S. urticaefolia*, *S. arizonica*, *S. setulosa*. *S. villosa*, *S. oreopola*. *S. Forreri*, *S. glechomaefolia*. *S. pusilla*, *S. prunelloides*, *S. pseudocomosa*, *S. laevis* and *S. unicostata*. This series is distinguished primarily by the deltoid or rhomboid leaf, truncate or cuneate at the base, their margins above middle usually flattened, passing into a leaf more and more narrow and elongate until one finds the leaves of *S. unicostata* linear and about 2 mm broad and entire. In general the petioles are longer than in the first series, ranging from about 8 mm to 2 cm.

Herbae brasilianae

Folia rotundato-cordata rarius ovata; herba repens . . . . 86. *S. procurrens*

Folia nullomodo rotundata vel oblongo-lanceolata vel elliptica

Herbae altitudine 30—40 cm caulibus in basi prostratis ascendentibus; folia oblonga in apice obtusa vel rotundata . 85. *S. lachnostachys*

Herbae vel suffrutices altitudine ad 1 m et ultra, caulibus strictis; folia nunc elliptica nunc oblongo-lanceolata in apice acuta vel acuminata

Calyces florentes extus appresso-hirtelli (excl. *S. uliginosa* var. *rufescens*) 4 ad

6 mm longi in maturitate 6—8 mm longi: folia in basi angustata

Calycum labia superior vix 1 mm longa; folia elliptico-ovata . . . . 83. *S. curta*

Calycum labia superior 2—2,5 mm longa; folia oblongo-lanceolata . . 82. *S. uliginosa*

Calyces florentes pilis extensis sparse conspersi 6—7 mm longi in maturitate 9—10 mm longi; folia in basi rotundata . . . . 84. *S. congestiflora*

Herbae boreali-americanae

Folia acuminato-cordata; corolla atrocyanea 86a. *S. hamulus*

Folia rhomboideo-lanceolata modo elliptica modo linearia

Calyces extus pilis brevibus extensis glandulosis hispiduli

Folia linearia 2 mm lata . . . . . . 72. *S. unicostata*

Folia elliptica 10—20 mm lata

Caules inter flores pilis brevibus extensis glandulosi; calyces maturi 8 ad 9 mm longi . . . . 76. *S. firma*

Caules inter flores pilis retrorsis eglandulosis vestiti; calyces maturi 5 ad 5,5 mm longi . . . . 75. *S. rostellata*

Calyces extus praesertim ad bases setosi vix glandulosi

Folia plerumque glabra interdum glauca 71. *S. laevis*

Folia utrimque setosa (vide praeterea *S. prunelloides* etiam *S. sinaloensis*) . 70. *S. pseudocomosa*

Folia nunc ovata vel obovata nunc deltoidea vel rhomboidea rarius elliptica interdum subrotunda

Folia deltoidea (ie. marginibus plerumque rectis) in basi praesertim truncata rarius late cuneata

Ramuli inter flores et calyces pilis brevibus extensis glandulosis hispiduli

Folia 1—3 cm longa

Styli ad apices utrimque pilosi; plantae erectae villosae . . . . 66. *S. villosa*

Styli dorsaliter pilosi; plantae prostratae foliis glabris . . . . 78. *S. Lozani*

Folia 3—8 cm longa; styli postice pilosi 61. *S. urticifolia*

Ramuli inter flores et calyces pilis brevibus saepius crispulis numquam glandulosis interdum longioribus setosis vestiti
  Corollarum tubi 3,5—4 mm longi . . . 67. *S. pusilla*
  Corollarum tubi 4.5—7 mm longi
    Plantae prostratae caulibus numerosis diffusis elongatis tegetiformibus . . 65. *S. oreopola*
    Plantae erectae caulibus paucis erectis
      Plantae plerumque 15—40 cm altae foliis praesertim ad bases confertis; spicae interruptae scapiformes
        Plantae radicibus tuberosis boreali-mexicanae . . . . 63. *S. Forreri*
        Plantae ut videtur caudicibus lignosis centrali-mexicanae (vide praeterea *S. prunelloides*) . . . . . 68. *S. glechomaefolia*
      Plantae plerumque 30—60 cm altae et ultra
        Plantae arizonicae foliis maximam partem glabris . . . . 62. *S. arizonica*
        Plantae centrali-mexicanae foliis maximam partem setulosis . . 64. *S. setulosa*
Folia obovata vel ovata (ie. marginibus convexis) interdum subrotunda frequenter rhomboideo-ovata vix deltoidea in basi angustata vel extenuata rarius late cuneata vel truncata (vide etiam 81. *S. sinaloensis*)
  Calyces extus pilis extensis longioribus setosis vix glandulosis vestiti
    Corollarum tubi 4 mm longi: plantae utrimque setosae . . . . 77. *S. veronicaefolia*
    Corollarum tubi 5.5—8 mm longi; folia maximam partem glabra
      Caules inter flores pilis crispulis recurvis vestiti et interdum longioribus setosis conspersi; folia plerumque rhomboidea . . . . 69. *S. prunelloides*
      Caules inter flores pilis extensis longioribus vestiti
        Folia rotundata petiolis 3—10 mm longis elata (vide 81. *S. sinaloensis*) 80. *S. prunifolia*

Folia elliptica vel obovata petiolis 3—5 mm longis elata . . . . . 79. *S. assurgens*
Calyces extus pilis brevibus (et rarius longioribus glandulosis vestiti
Herbae debiles ut videtur prostratae; folia remota petiolis 2—3 mm longis elata . . . . 78. *S. Lozani*
Herbae caudicibus tuberosis et foliis obovatis ad basim confertis: caules scapiformes erecti . . . . 73. *S. nana*
Herbae erectae 30—50 cm altae (et rarius ultra)
Folia ovata in basi frequenter truncata 74. *S. tricuspidata*
Folia elliptica
Caules inter flores pilis brevibus extensis plus minusve glandulosi; calyces maturi 8—9 mm longi
Herbae 30—40 cm altae; corollarum tubi 4,5 mm longi . . . . . . 76. *S. firma*
Suffrutices 2—3 m alti; corollarum tubi 12—18 mm longi . . . 86b. *S. Hintonii*
Caules inter flores pilis retrorsis eglandulosis vestiti: calyces maturi 5 ad 5,5 mm longi . . . . 75. *S. rostellata*

61. **S. urticifolia** L., Sp. Pl. 24. 1753 per specim. Claytonianum (no. 292) in herb. Mus. Brit. constituta est: typum vidi. — ? S. *Chapmani* Gray, Syn. Fl. N. Am. 2. 370, 1878 per specim. in Florida a Chapman lectum constituta est; specimen verum in herb. Torrey. vidi. — ? *S. Claytoni* Curtis ex A. Gray, Syn. Fl. N. Am. 2. 370, 1878.

Herba perennis rhizoma lignosa et radicibus incrassatis altitudine plerumque 50—60 cm caulibus paucis ascendentibus debiliter ramosis pilis glandulosis extensis vestitis, internodiis 3—8 cm longis: foliorum laminis 3—8 cm longis, 2—6 cm latis, deltoideo-ovatis, in apice subacutis, in basi maximam partem late cuneatis et ad petiolos marginatos 1—2 cm longos extenuatis margine crenato-serrata, paginis ambobus glabris vel sparsissime hirtellis, inferiore pallida: floribus 3—6 in verticillastris bracteis ovato-acuminatis 3—4 mm longis punctato-glandulosis caducis subtentis, glomerulis inter se 1—4 cm distantibus; calycibus florentibus 4,5—5 mm longis, glanduloso-hispidis in maturitate 8—10 mm longis, pedicellis 4—8 mm longis elatis; corollarum tubo 5 mm longo, labia superiore 3—3,5 mm alta, inferiore 6—6,5 mm longa.

The plant in the Linnean herbarium annotated by Linnaeus is essentially the same as Clayton's plant. *S. Chapmani* is an uncertain entity, apparently not since collected; it is described as 5 ft. tall and apparently was a much branched plant. Could it have been a hybrid, perhaps with *S. azurea*? There is no evidence in the flowers. Ranges in dry woods from the District of Columbia westward to western Tennessee and southward through the Atlantic States to Georgia, Alabama and Mississippi.

62. **S. arizonica** Gray, Syn. Fl. N. Am. 2, 370, 1886 per specim. in Arizona in monte Graham dicto a Rothrock (no. 407) lectum constituta est; typum in herb. Gray., isotypum in herb. Smithson. vidi. — *S. arizonica* var. *huachucana* Jones, Contrib. West. Bot. 12, 71, 1908 per specim. in Arizonae montibus Huachuca dictis a Jones lectum constituta est; typum in herb. Coll. Pomonae vidi.

Herba perennis rhizoma repente lignosa caulibus paucis ascendentibus altitudine 30—60 cm, nunc omnino glabris nunc ad facies crispe puberulis et pilis longioribus extensis sparse ornatis superne frequenter subramosis, internodiis 3—5 cm longis; foliorum laminis deltoideis 3—5 cm longis, 1,5—3 cm latis, in apice acutis etiam acuminatis, in basi cuneatis vel truncatis, petiolis 1 ad 1.5 cm longis elatis, paginis ambobus viridibus glabris vel sparse hirtellis, inferiore pallida, marginibus serratis; floribus plerumque tribus in verticillastris bracteis glabris ciliatis subtentis, pedicellis 2—3 mm longis elatis; calycibus florentibus 5—5,5 mm longis, extus sparse hispidulis, in maturitate 7.5—8 mm longis; corollarum tubo 6—8 mm longo, labia superiore 4 mm longo, inferiore 6—9 mm diametro.

A specimen collected by Pringle (no. 10104) in the state of Durango near Sandia Station is remarkably like *Salvia arizonica* in habit but with larger flowers and a taller branching habit. In flower characters it is remarkably like *S. Forreri*, but differs from that in the much taller branched habit. A specimen collected by Pringle (no. 10312) in the state of Hidalgo on a calcareous mesa near Metepec station is identical in habit with the first mentioned specimen but is remarkable in the larger flowers, the corolla tube being 8—8.5 mm long, the lip 12—13 mm long and other parts proportionate, the calyces being 11—12 mm long at maturity. Whether these specimens are referable to *S. arizonica*, representing isolated races of a further southward extension, whether they are more nearly allied to *S. Forreri* or whether that in Hidalgo is a fairly distinct species is impossible to ascertain from the material available, particularly since the underground parts are wanting.

S. Forreri is scarcely separable from *S. arizonica* save in habit. The form described from Coahuila (*S. parrasana*) appears also in Durango.

Texas: Limpia Mts., Davis Mts., Chisos Mts. — Arizona: Mt. Graham. Rincon Mts., Huachuca Mts.

63. **S. Forreri** Greene Pittonia 1, 156, 1888 per specim. in Mexico prov. Durango in declivitatibus Sierra Madre a Forrer lectum constituta est; isotypos in herb. Smithson., Gray. et Univ. Calif. (Berkeley) vidi. — *S. parrasana* Brandegee in Univ. Calif. Publ. Bot. 4, 187, 1911 per specim. in Mexico prov. Coahuila in Sierra de Parras a Purpus (no. 4637) lectum constituta est: typum in herb. Univ. Calif. (Berkeley) vidi.

Herba perennis altitudine ad 50 cm radicibus tuberosis caulibus pluribus e caudice lignoso gracile ascendentibus, nunc breviter hirtellis et pilis longioribus extensis glandulosis sparsissime conspersis nunc fere glabris, internodiis mediis 2—3 cm longis; foliorum laminis 1.5—4 cm longis, anguste deltoideis, in apice saepius acutis, in basi cuneatis, margine serrata, paginis ambobus sparse hispido-villosulis, etiam subglabris, petiolis 1—2 cm longis elatis; floribus circiter tribus in verticillastris bracteis fere glabris ciliatis 5—8 mm longis subtentis, glomerulis inter se 1—4 cm distantibus; calycibus florentibus 4,5—6 mm longis, extus sparse appresso-hispidis, in maturitate 8 mm longis; corollarum tubo 5—8 mm longo, labia superiore 3,5—6 mm alta, inferiore 7—11 mm longa.

Mexico: Durango: Sandias Sta.; Cacaria; Inde. 2000 m: Otinapa; Tejamen; Metates pr. Cueva, 2800—2900 m; Jarocho. 2400—2500 m; Zacatecas: Mt. El Temoroso pr. Aranzazu in quercetis; Sinaloa: El Batel, Pico del Aguila; Coahuila: Lerios pr. Saltillo; Sierra Guadalupe pr. La Cuchilla; Nuevo-Leon: in angustiis San Francisco dictis versus Pueblo Galeana, 2500 m, in quercetis.

64. **S. setulosa** Fern. in Proc. Am. Acad. 36, 499, 1901 per specim. in Mexico prov. Morelos in montibus supra Cuernavaca a Pringle (no. 8403) lectum constituta est; typum in herb. Gray., isotypos complures vidi.

Suffrutex ut videtur caulibus erectis altitudine 60 cm. et ultra superne ramosis gracilibus pilis extensis longioribus ornatis et superne pubescentibus, internodiis 5—15 cm longis: foliorum laminis 2—5 cm longis 1—3 cm latis, deltoideo-ovatis. in apice obtusis, in basi saepius truncatis interdum late cuneatis margine crenato-serrata, pagina superiore scaberula, inferiore nunc subglabra nunc pubescente, petiolis 1—2 cm longis elatis: floribus 3—6 in verticillastris bracteis ovato-attenuatis glabris ciliatis 1—1,5 cm longis subtentis, glomerulis inter se 1—5 cm distantibus: calycibus florentibus 6—7 mm longis, extus sparse hirtellis et

praesertim ad basim setosis, in maturitate 8—10 mm longis, pedicellis 3—4 mm longis elatis; corollarum tubo 6,5—8 mm longo, labia superiore 5,5 mm alta, inferiore 7—8 mm diametro.

Mexico: Mexico: pr. Ozumba 2500 m; Morelos: Cuernavaca 2500 m; Oaxaca: Etla: Las Sedas.

65. **S. oreopola** Fern. in Proc. Am. Acad. 35, 517, 1900 per specim. in Mexico prov. Morelos in montibus supra Cuernavaca a Pringle (no. 7643) lectum constituta est; typum in herb. Gray. vidi.

Herba perennis caudice lignoso caulibus compluribus prostratis tegetiformibus pilis brevibus hirtellis et longioribus setaceis extensis sparse vestitis, internodiis 5—15 cm longis; foliorum laminis deltoideo-ovatis 2—3 cm longis, in apice obtusiusculis, in basi truncatis, petiolis setosis 3—12 mm longis elatis, marginibus irregulariter serratis, pagina superiore pilis longioribus gracilibus setaceis sparse conspersa, inferiore fere glabra; floribus tribus in verticillastris bracteis tarde deciduis vel perstatis setosis subtentis, glomerulis demum inter se 1—5 cm distantibus; calycibus florentibus 4,5 mm longis extus hirtellis et pilis longis setaceis sparse vestitis, in maturitate 6 mm longis, pedicellis 2—3 mm longis elatis; corollarum tubo 6—7 mm longo labia superiore 3 mm alta, inferiore 7 mm diametro. A specimen collected by Ruth Q. Abbott (no. 133) at Taxco, Guerrero seems to belong here, but is said to have been up to a meter tall.

Mexico: Morelos: Valle del Tepeite, Cuernavaca 2100—2200 m; Oaxaca: Tlaxiaco.

66. **S. villosa** Fern. in Proc. Am. Acad. 35. 518. 1900 per specim. in Mexico in montibus prov. San Luis Potosi prope San Miguelito a Schaffner (no. 678) lectum constituta est; typum in herb. Gray., isotypos in herb. horti bot. Nov. Eborac. vidi.

Herba perennis caudice lignoso caulibus procumbentibus 30—40 cm longis utrimque pilis extensis glandulosis dense vestitis, internodiis 1—3 cm longis; foliorum laminis deltoideis 1,5—3 cm longis, 1—2,5 cm latis, in apice obtusis in basi saepius truncatis, petiolis 0.5—1 cm longis elatis, margine serrato-crenata, paginis ambobus viridibus pilis extensis glandulosis viscidis; floribus 1—3 in verticillastris bracteis glandulosis subtentis; glomerulis demum inter se 1—3 cm distantibus; calycibus florentibus 8 mm longis extus pilis glandulosis brevibus et longis sparse vestitis, in maturitate 9 mm longis latissimis; corollarum tubo 7 mm longo, labia superiore 3.5 mm alta, inferiore 10 mm longa; stylo ad apicem et utrimque piloso.

Mexico: San Luis Potosi: Minas de San Rafael, San Miguelito.

67. **S. pusilla** Fern. in Proc. Am. Acad. 35, 495, 1900 per specim. in Mexico prov. Oaxaca in Sierra de San Felipe a Conzatti (no. 708) lectum constituta est; typum in herb. Gray. vidi.

Herba pusilla caudice tuberoso lignoso caulibus paucis debilibus ut videtur in basi prostratis utrimque pilis brevibus extensis irrasis et nisi inter flores longioribus setaceis interdum viscidis pilosis; foliorum laminis deltoideo-ovatis 1—1.5 cm longis, in apice obtusis, in basi subtruncatis vel late cuneato-angustatis, marginibus crenulatis, paginis ambobus pilis longioribus setosis et inferiore saepius pilis minutis irrasis; floribus 1—3 in bractearum perstatarum setosarum axillis dispositis, glomerulis inter se 0,5—1,5 cm distantibus, in spicis interruptis exilibus instructis; calycibus florentibus 3—4 mm longis, extus setaceis labia superiore subtrivenis; corollarum tubo 3,5—4 mm longo, labia superiore 2,5 mm alta, inferiore duplo longiore.

Mexico: Oaxaca: Yalalag, 1200—2500 m; Cerro de San Felipe, 2200 m.

68. **S. glechomaefolia** Kunth in Humboldt et Bonpland, Voy., Nov. Gen. et Sp. Pl. 2, 290, t. 141, 1817 per specim. in Mexico inter urbem Guanajuato et pagum Sanctae Rosae a Humboldt et Bonpland lectum constituta est; typum in herb. Mus. Par. vidi. — *S. reticulata* Mart. et Gal. in Bull. Acad. Brux. 11, II, 64, 1844 per specim. in Mexico prov. Oaxaca in Cerro de San Felipe a Galeotti (no. 646) lectum constituta est; typum in herb. Mus. Brux. vidi. — *S. lentiginosa* Brandegee in Univ. Calif. Pub. Bot. 4, 279, 1912 per specim. in Mexico prov. San Luis Potosi ad Minas de San Rafael a Purpus (no. 5449) lectum constituta est; typum in herb. Univ. Calif. (Berkeley) vidi.

Herba perennis caudice lignoso (? et radicibus incrassatis) caulibus paucis ascendentibus gracilibus 15—40 cm altis saepius pilis brevibus crispulis hirtellis et interdum praesertim infime pilis longis 1—2 mm extensis eglandulosis sparse ornatis rarius subglabris, internodiis mediis 3—8 cm longis; foliorum praesertim ad bases confertorum laminis 1—5 cm longis deltoideis, in apice obtusis, in basi truncatis vel cuneatis et petiolis 1—3 cm longis elatis, margine crenata, pagina superiore minute scaberula, inferiore nunc omnino glabra nunc cinereo-pubescente; floribus 3—6 in verticillastris bracteis hirtellis ciliatis subtentis, glomerulis inter se 1—4 cm distantibus; calycibus florentibus 5—6,5 mm longis extus pilis minutis hirtellis rarius longioribus hispidis ornatis, in maturitate 8 mm longis; corollarum tubo 6—7,5 mm longo, labia superiore 4,5—5 mm alta, inferiore 7—8 mm diametro.

Mexico: San Luis Potosi: Santa Ana, Sierra de Catorce. 2800—3000 m; San Luis Potosi. 2000—2600 m; Puebla: Cerro del Gavilan, Coxcatlan. 3000—3200 m; Oaxaca: Zempoaltepeque. 2500 m; La Parada. 2500 m; Reyes. 2300—3000 m; Cerro de San Felipe, 2600 m.

69. **S. prunelloides** Kunth in Humboldt et Bonpland, Voy.. Nov. Gen. et Sp. Pl. 2, 289, 1817 per specim. in Mexico in scopulosis montis ignivomi Jorulla a Humboldt et Bonpland lectum constituta est: typum in herb. Mus. Par. vidi. — *S. trichandra* Briq. in Ann. Conserv. et Jard. Bot. Genève 2, 133, 1898. per specim. in Mexico prov. Mexico in Sierra de las Cruces a Pringle (no. 4200) lectum constituta est; typum in herb. Delessert., isotypos numerosos vidi. — *S. rhombifolia* Sesse et Moc., Pl. Nov. Hisp. ed. 2. 8. 1893 et in Fl. Mex. ed. 2. 5. 1894; specimina ex herb. horti Matrit. vidi.

Herba humilis altitudine ad 30 cm radicibus tuberosis vel nodulosis, caulibus procumbentibus crispule pubescentibus et saepius pilis longioribus extensis ornatis. interdum fere glabris: foliis ad basim saepius approximatis, laminis 2—5 (8) cm longis. 1—2 (3,5) cm latis, maximam partem rhomboideis vel anguste ovatis, obtusis, in basi ad petiolos 0,5—1.5 cm longos cuneato-angustatis, margine remote crenato-serrata, paginis ambobus pilis longioribus sparse conspersis interdum glabris; floribus 3—6 in verticillastris, bracteis ovato-attenuatis 6—9 mm longis caeruleis deciduis hirsutis subtentis, glomerulis infimis inter se 1—3 cm distantibus supremis confertis; calycibus florentibus 5—8 mm longis extus hispido-pilosis, in maturitate 1 cm longis, pedicellis 2—3 mm longis elatis: corollarum tubo 6,5—8 mm longo, labia superiore 5—6 mm alta. inferiore 10—13 mm longa.

Passes almost imperceptibly into *S. laevis* and *S. pseudocomosa* on the one hand and *S. glechomaefolia* on the other.

Mexico: Mexico: Eslava; Canada de Contreros. D. F.; Sierra de Ajusco: Sierra de las Cruces: Desierta Vieja; Amecameca: Monte de Rio Frio; Puebla: Popocatepetl; Ixtaccihuatl.

70. **S. pseudocomosa** Epling sp. nov. per specim. in Mexico prov. Puebla prope Esperanza a Purpus (no. 5679) lectum constituta est; typum in herb. Univ. Calif. (Berkeley), isotypos in herb. Smithson., Gray.. horti bot. Nov. Eborac. et Missour. et Mus. Field. vidi.

Herba perennis caudice lignoso caulibus ascendentibus ad facies pilis retrorsis et longioribus extensis vestitis, internodiis mediis 1—3 cm long; foliorum laminis 3—5 cm longis, 8—12 mm latis, deltoideo-ellipticis vel lanceolatis, in apice acutis, in basi ad petiolos 4—8 mm longos cuneato-angustatis, margine serrata. paginis ambobus pilis longioribus sparse conspersis:

floribus plerumque tribus in verticillastris bracteis hirtellis subtentis, glomerulis infimis 1—3 cm distantibus supremis confertis; calycibus florentibus 5—6 mm longis extus appresso-setosis, labiis hiantibus tubum subaequantibus, in maturitate 10 mm longis; corollarum tubo 6—7 mm longo, labia superiore 4 mm alta, inferiore 7—8 mm longa.

Suggests strongly a hybrid between *S. prunelloides* or *S. glechomaefolia* and *S. laevis*, which it very well may be. Passes imperceptibly into *S. laevis* and *S. prunelloides*.

Mexico: Puebla: Esperanza, 2660 m; Boca del Monte: Michoacan: Punguato pr. Morelia, 2100 m.

71. **S. laevis** Benth., Lab. Gen. et Sp. 251, 1833 per specim. in Mexico ad Toluca prope Tlalpujahua a Graham lectum constituta est; typum in herb. Kew. vidi. — *S. comosa* Peyritsch in Linnaea **30**, 32, 1859—60 per specim. in Mexico prope Toluca in montibus ad San Miguel a C. Heller lectum constituta est; typum in herb. Mus. Vindob. vidi (non Salisb., Prodr. 73, 1796). — *S. hypoglauca* Briq. in Ann. Conserv. et Jard. Bot. Genève **2**, 136. 1898 per specim. in Mexico prov. Michoacan in montibus prope Patzcuaro a Pringle (no. 4155) lectum constituta est; typum in herb. Delessert., isotypos complures vidi. — *S. comosa* var. *hypoglauca* Fern. in Proc. Am. Acad. **35**, 501. 1900 per *S. hypoglaucam* Briq., loc. cit., constituta est.

Herba perennis 10—50 cm alta caudice lignoso tuberoso caulibus ascendentibus glaberrimis, raro ad facies pilis retrorsis conspersis interdum ad bases pilis setosis ornatis, internodiis 3 ad 5 cm longis; foliorum laminis 4—8 cm longis, 2—12 mm latis maximam partem 5—6 mm latis, anguste lanceolatis vel linearibus, saepius acutis, in basi ad petiolos breves attenuatis, margine saepius praesertim ad apices serrulata, paginis ambobus glabris vel inferiore sparse setosa; floribus circiter tribus in verticillastris, bracteis ovato-acuminatis glabris ciliatis deciduis subtentis, glomerulis infimis 1—3 cm distantibus, supremis confertis; calycibus florentibus 5—6,5 mm longis, in maturitate 8—10 mm longis, extus sparse appresso-setosis, labiis angustis tubum subaequantibus; corollarum tubo 5—7.5 mm longo, labia superiore 3—4,5 mm alta, inferiore 8—10 mm diametro.

Some forms in Michoacan collected by Fr. Arsène near Punguato and Loma Sta. Maria (no. 5553) are very puzzling, having mostly elliptical rather blunt leaves distinctly setose, as are also the stems.

Mexico: San Luis Potosi: San Luis Potosi, 2000—2600 m; Hidalgo: inter Somoriel et Las Lajas; Puebla: Puebla, 2150 m. Atcazinco, 1900 m; Laguna San Baltasar; Cerro Tepoxuchil.

2330 m; pr. Alseseca, 2150 m; Mayorazgo, 2120 m; Mexico: El Oro, 3200 m; Sierra de las Cruces, 3000 m: Santa Fe; Toluca; San Miguel; Michoacan: Cerro Azul pr. Morelia, 2200 m; Patzcuaro; Tlalpujahua.

72. **S. unicostata** Fernald in Proc. Am. Acad. 35, 501, 1900 per specim. in Mexico prov. San Luis Potosi a Parry et Palmer (no. 760) lectum constituta est; typum in herb. Gray., isotypum in herb. Smithson. vidi.

Herba perennis altitudine ad 40 cm, caulibus in basi procumbentibus glabris, superne pilis extensis glandulosis vix 0,5 mm longis sparse conspersis, internodiis 3—5 cm longis; foliorum laminis sessilibus 3—8 cm longis, vix 2 mm latis, linearibus utrimque glabris subglaucis, margine integra, vena media subtus prominula; floribus 1—3 in verticillastris, bracteis ovato-acuminatis 4—5 mm longis deciduis subtentis, glomerulis inter se 1—3 cm distantibus; calycibus florentibus vix 5 mm longis, extus glanduloso-hispidulis, in maturitate 6 mm longis; corollarum caerulearum tubo 4 mm longo, intus nudo, labia superiore 3 mm alta, inferiore 6 mm longa.

Save in the glandular pubescence of the inflorescence this scarcely differs from some narrow leaved forms of *S. laevis* which also occurs in the same region.

Mexico: San Luis Potosi: circa urbem 2000—2600 m; Sierra de San Miguelito, 2100—2300 m.

73. **S. nana** Kunth in Humboldt et Bonpland, Voy., Nov. Gen. et Sp. Pl. 2, 289, 1817 per specim. in Mexico prov. Guanajuato, ad oppidum Guanajuato in locis siccis prope fodinam Valentianae a Humboldt et Bonpland lectum constituta est; typum in herb. Mus. Par. vidi.

Herba perennis radice tuberoso elongato recto, caulibus pilis extensis glandulosis vestitis in basi ramosis; foliis ad basim confertis saepe humi expansis, laminis 4—9 cm longis, 2—5 cm latis, nunc ovatis nunc rhomboideo-ellipticis in apice obtusis, in basi ad petiolos 5—15 mm longos cuneato-angustatis, margine crenata, pagina superiore glabra, inferiore saepe purpurea praesertim ad venas villosula; floribus 3—6 in verticillastris bracteis 5—8 mm longis glandulosis deciduis subtentis, glomerulis infimis 1—4 cm inter se distantibus, supremis confertis, pedunculo erecto 15—30 cm longo pilis glandulosis conspersis elatis; calycibus florentibus 5—6 mm longis extus glanduloso-hispidis, in maturitate 8 mm longis, labia superiore tridentata saepe truncata pedicellis 4 mm longis elatis; corollarum tubo 5—6 mm longo, labia superiore 3,5 mm alta, inferiore 6,5—9 mm diametro.

Mexico: San Luis Potosi: San Rafael, Charcas; Guanajuato: Sta. Rosa; Durango: Otinapa; Palos Colorados ad urbem, 2400 m; Oaxaca: Boca de Leon; Telixlahuaca.

var. **eglandulosa** Epling var. nov. per specim. in Guatemala in planitie Quezaltenango a Hartweg (no. 609) lectum constituta est; typum in herb. Kew. vidi.

Planta tota eglandulosa non nisi glandulis sessilibus paucis in floribus conspersis, pedunculo crispule pubescente; calycibus ad venas sparse hispidulis.

Guatemala: Quezaltenango; Huehuetenango: Sierra Cuchumatanes, 3600 m.

74. **S. tricuspidata** Mart. et Gal. in Bull. Acad. Brux. 11, II, 78, 1844 per specim. in Mexico prov. Oaxaca in Sierra de San Felipe, a Galeotti (no. 649) lectum constituta est; typum in herb. Mus. Brux., isotypum in herb. Kew. vidi.

Suffrutex caulibus altitudine 30—60 cm paucis e caudice lignoso ascendentibus appresso-pubescentibus superne incanis; foliorum laminis 2—4,5 cm longis, 1,5—3,5 cm latis, late ovatis, frequenter subrotundis, obtusis, in basi rotundato-truncatis raro late cuneatis margine crenato-serrata, pagina superiore hirtella, inferiore nisi ad venas glabris, glandulis sessilibus prominulis conspersis, petiolis 5—8 mm longis elatis: floribus 3—6 in verticillastris bracteis 4—6 mm longis glanduloso-hirtellis subtentis, glomerulis inter se 0,5—2 cm distantibus; pedunculis 2—3 cm longis; calycibus florentibus 5,5—6 mm longis extus glanduloso-hispidis, in maturitate 8 mm longis, pedicellis 5—6 mm longis elatis; corollarum tubo 7—8 mm longo, labia superiore 4 mm alta, inferiore 5,5—6,5 mm longa.

Mexico: Oaxaca: Cerro de San Felipe, 1750—3200 m.

75. **S. rostellata** Epling sp. nov. per specim. in Mexico prov. Jalisco inter San Sebastian et Mascota a Mexia (n. 1406) lectum constituta est; typum in herb. Univ. Calif. (Berkeley) vidi.

Herba perennis suffruticosa ramulis superne pilis retrorsis appressis pubescentibus; foliorum laminis elliptico-oblongis, ca. 6 cm longis, ca. 2 cm latis, in apice breviter acuminatis infra medium ad petiolos 3—4 mm longos angustatis etiam acuminatis, marginibus serrulatis, pagina superiore fere glabra inferiore ad venas hirtella; floribus ca. 6 in verticillastris bracteis caducis subtentis in spicis interruptis ut videtur interdum axillaribus dispositis; calycibus florentibus 4 mm longis extus hispidulis, ad margines pilis longioribus glandulosis interdum fimbriatis, laciniis omnibus abrupte rostellatis, maturis 5—5,5 mm longis; corollarum tubo 4 mm longo, ad basim lenissime lateraliter impressis, labia superiore 4 mm alta, inferiore duplo longiore.

Mexico: Jalisco: inter San Sebastian et Mascota.

76. **S. firma** Fernald in Proc. Am. Acad. 35, 502, 1900 per specim. in Mexico prov. Jalisco in collibus prope Rio Blanco a Palmer (no. 61) lectum constituta est; typum in herb. Gray., isotypos in herb. Kew., Acad. Sci. Phil., et Smithson. vidi.

Herba perennis altitudine 30—40 cm, caulibus in basi ramosis e caudice lignoso ascendentibus, glabris, superne pilis glandulosis brevibus extensis vestitis, internodiis 2—3 cm longis; foliorum laminis firmis, 3—6 cm longis, 10—18 mm latis, maximam partem ellipticis, infimis pro rata latioribus, omnibus fere sessilibus, utrimque angustatis margine leniter serrata, pagina superiore setosa, inferiore glabra, rarius aequisetosa; floribus 3—6 in verticillastris bracteis bracteolisque 3—6 mm longis subtentis, glomerulis 2—5 cm inter se distantibus, pedunculo elongato elatis; calycibus florentibus 4—5 mm longis, extus glandulosis in maturitate 8—9 mm longis, pedicellis 3—4 mm longis elatis; corollarum tubo 4,5 mm longo, labia superiore 3 mm alta, inferiore 7—8 mm longa.

Mexico: Jalisco: Guadalajara; Rio Blanco; Nayarit: Tepic.

77. **S. veronicaefolia** Gray ex S. Wats. in Proc. Am. Acad. 22, 444, 1887 per specim. in Mexico prov. Jalisco ad Rio Blanco a Palmer (no. 28) lectum constituta est; typum in herb. Gray., isotypos complures vidi.

Herba perennis altitudine 30—40 cm, caulibus pluribus e caudice lignoso ascendentibus in basi procumbentibus, pilis brevibus recurvis ad facies et longioribus setaceis (2—2,5 mm longis) extensis vestitis, internodiis 3—6 cm longis; foliorum laminis fere sessilibus 2—3 cm longis, 1.5—2,5 cm latis, ovatis subrotundisve, vel obtusis vel rotundatis, in basi cuneato-rotundatis, margine remote crenato-serrata, paginis ambobus setosis; floribus maximam partem tribus in verticillastris bracteis ovatis perstatis setosis 5—8 mm longis subtentis, glomerulis inter se 1—3 cm distantibus; calycibus florentibus 4—5 mm longis, extus pulchre setosis, in maturitate 6 mm longis, pedicellis 1—2 mm longis elatis; corollarum tubo 4 mm longo, labia superiore 3 mm alta, inferiore 7 mm diametro.

Mexico: Jalisco: Guadalajara, 1500 m; Zapatlan, 1600 m; Rio Blanco; Chapala.

78. **S. Lozani** Fern. in Proc. Am. Acad. 43, 64, 1907 per specim. in Mexico prov. Hidalgo in pinetis prope ferrofabricam Trinidad, a Pringle (no. 8928) lectum constituta est; typum in herb. Gray., isotypos complures vidi.

Herba pulchella humilis debilis ut videtur prostrata, caulibus gracilibus 30—40 cm longis, pilis glandulosis

extensis 1 mm longis conspersis. internodiis 3—6 cm longis; foliorum laminis subsessilibus petiolis 1—2 mm longis elatis, 10—24 mm longis, 6—15 mm latis, infimis subrotundis, caeterum ovatis vel deltoideis utrimque rotundatis, margine integra, paginis ambobus glabris; floribus 1—3 in verticillastris bracteis perstatis 2 mm longis ovatis subtentis, glomerulis paucis 1 cm inter se distantibus; calycibus florentibus 5 mm longis extus pilis glandulosis conspersis in maturitate non visis; corollarum tubo 7—8 mm longo, labia superiore 4—4,5 mm alta, inferiore 9—10 mm longa.

Mexico: Hidalgo: in pinetis pr. Trinidad ferrofabricam, 1930 m.

79. **S. assurgens** Kunth in Humboldt et Bonpland, Voy., Nov. Gen. et Sp. Pl. 2, 293, 1817 per specimen in Mexico prope Patzcuaro a Humboldt et Bonpland lectum constituta est; typum in herb. Mus. Par. vidi.

Herba perennis caudice lignoso caulibus paucis procumbentibus 20—45 cm longis infime hirtellis superne pilis gracilibus extensis tenuibus viscidis vestitis, internodiis mediis 1—5 cm longis; foliorum laminis plerumque 3—8 cm longis, 1—4 cm latis, ellipticis; in apice acutiusculis etiam obtusis, in basi ad petiolos subnullos angustatis vel extenuatis, margine supra medium serrato-crenata, paginis ambobus glabris nisi ad venas hirtellis: floribus 3—6 in verticillastris bracteis hirtellis subtentis glomerulis inter se 1—3 cm distantibus supremis frequenter confertis; calycibus florentibus 5,5—6,5 mm longis extus pilis extensis gracilibus subglandulosis dense vestitis, in maturitate 8—10 mm longis; corollarum tubo 5,5—6,5 mm longo, subtus ad basim lenissime invaginato, labia superiore 3,5 mm alta, inferiore 7,5 mm longa.

Save for the more lax inflorescence there is apparently little to suggest segregation of *S. sinaloensis*. Indeed, *S. prunifolia* is scarcely more separable from this species, being distinguished chiefly by the more rotund leaves and longer petioles.

Mexico: Michoacan: Morelia. 1950—2300 m; Patzcuaro.

80. **S. prunifolia** Fern. in Proc. Am. Acad. 35, 518, 1900 per specim. in Mexico prov. Nayarit prope Santa Gertrudis in montibus Sierra Madre a Rose (no. 3407) lectum constituta est; typum in herb. Smithson. vidi.

Herba perennis procumbens verisimiliter e caudice lignoso caulibus 35—50 cm longis infime hirtellis superne pilis longioribus gracilibus subglandulosis vestitis, internodiis 3—5 cm longis: foliorum laminis rotundato-ovatis 3—4 cm diametro, in apice brevissime acuminatis, in basi nunc rotundatis nunc rotundato-angustatis, petiolis 3—10 mm longis elatis, margine supra

medium serrato-crenata, paginis ambobus glabris rarius sparse hirtellis; floribus 3—6 in verticillastris bracteis hirtellis subtentis, glomerulis inter se 1—5 cm distantibus; calycibus florentibus 5—5,5 mm longis extus pilis extensis longioribus gracilibus subglandulosis dense vestitis, labia superiore breviter acuminata, in maturitate 7,5 mm longa; corollarum tubo 5,5—6 mm longo, labia superiore 3—3,5 mm alta, inferiore 7 mm longa.

Mexico: Nayarit: Santa Gertrudis; Durango: in querceto-pinetis, El Salto (Aserraderos), 2540—2570 m.

81. **S. sinaloensis** Fern. in Proc. Am. Acad. 35, 502, 1900 per specim. in Mexico prov. Sinaloa prope Colomas a Rose (no. 1727) lectum constituta est; typum in herb. Gray. vidi.

Herba perennis altitudine 15—30 cm, caulibus plus minusve procumbentibus e caudice lignoso ascendentibus, praesertim inter flores pilis extensis setosis plus minusve vestitis; foliorum laminis elliptico-obovatis 3—6 cm longis, in apice acutis infra medium extenuatis, subsessilibus, margine acute serrulata, paginis ambobus modo fere glabris modo pilis extensis setosis; floribus ca. 3 in verticillastris bracteis caducis subtentis in spicis interruptis brevibus dispositis, glomerulis inter se 1—4 cm distantibus; calycibus extus pilis extensis gracilibus setosis in maturitate 7,5 mm longis.

Mexico: Sinaloa: Colomas.

82. **S. uliginosa** Benth., Lab. Gen. et Sp. 251, 1833 et in DC. Prodr. 12. 305, 1848 per specim. in Uruguay prope Montevideo a Sellow (no. 466) lectum constituta est; typum in herb. Mus. Berol. vidi. — ? *S. lanceolata* Larranaga, Escritos 2, 12, 1923.

Herba perennis altitudine ad 2 m caulibus e rhizomate repente strictis interdum superne ramosis erectis superne appresso-hirtellis; foliorum laminis 3—9 cm longis, 1—2,5 cm latis oblongo-lanceolatis, in apice acutis, in basi ad petiolum 1—2 cm longum cuneato-angustatis rarius subtruncatis margine subrecta acute serrata, paginis ambobus nunc omnino glabris nunc hirtellis glandulis sessilibus prominulis punctatis; floribus 6 et ultra in verticillastris bracteis ovato-acuminatis 6—12 mm longis deciduis subtentis, glomerulis infimis 1—4 cm distantibus, caeteris in spicas cylindratas saepe atropurpureas 5—12 cm longas confertis; calycibus florentibus 5—6 mm longis extus hirtellis et glandulis sessilibus conspersis laevibus, in maturitate 8 mm longis, labia superiore vel breviter acuminata vel trimucronata 2—2,5 mm longa, inferioris laciniis ovato-acuminatis 2,5—3 mm longis sinu infimo 3—3,5 mm alto, pedicellis 1 mm longis elatis; corollarum pulchre caerulearum tubo 6—7,5 mm longo, labia superiore 4,5—5 mm alta, inferiore 7—9 mm diametro.

Brasilia: Minas Geraes: Caldas; Rio Janeiro: Petropolis: Parana: prope Piraguara ad marginem silvulae; in locis paludosis prope Serrinha; Rio Grande do Sul: sine loco; Uruguay: Santa Lucia; San Jose; Concepcion; in uliginosis prope Salto Grande: ad ripas prope Montevideo; Estancio do Salto; ad Arroyo Chapa: Argentina: Buenos Aires: Barrancas al Sud; Buenos Aires; Los Talas; Las Conchas; Entre Rios: islas del delta, Ibicuy; in silvis humidis fluminis Parana; Misiones: Posadas, Bonpland, in fruticetis prope amnem Martires Chico; prope Loreto ad Rio Magdalena.

var. **rufescens** Benth., Lab. Gen. et Sp. 251, 1833 et in DC. Prodr. 12, 306, 1848 per specim. in Brasiliae sylvis deciduis inter Minas et Rio Janeiro a St. Hilaire lectum constituta est; typum in herb. Mus. Par. vidi.

Caulibus superne foliisque in siccis rufescente villosis; calycibus hirtellis et subvillosis; foliorum laminis rarius ad 15 cm longis, 6—7 cm latis.

Minas Geraes: in silvis caeduis inter Minas Geraes et Rio de Janeiro; Sao Paulo: sine loco.

83. **S. curta** Epl. in Rep. Spec. Nov., Beiheft 85. 53, 1935 per specim. in Brasiliae prov. Parana prope Calmon ad marginem silvae primaevae a Dusén (no. 9283) lectum constituta est: typum in herb. Mus. Stockh., isotypos in herb. horti bot. Missour., Nov. Eborac., Mus. Berolin., Kew., et Smithson. vidi.

Herba altitudine ad 2 m. caulibus erectis superne ramosis minutissime puberulis: foliorum laminis 5—8 cm longis, 1,5—2,5 cm latis, anguste elliptico-ovatis, in apice acutis vel acuminatis, in basi ad petiolos 0,5—1 cm longos cuneato-angustatis, margine convexiore serrata, pagina superiore glabra, inferiore ad venas minutissime puberula; floribus 6 et ultra in verticillastris bracteis rotundato-caudatis 4—8 mm longis minute hirtellis deciduis subtentis dispositis, glomerulis infimis 1—2 cm distantibus supremis approximatis in spicis interruptis interdum paniculatis 10—35 cm longis instructis; calycibus florentibus 4—5 mm longis. extus brevissime appresso-hirtellis purpureis, in maturitate paulo auctis. labia superiore circiter 1 mm alta saepius trimucronata subspinosa. inferioris laciniis subaequilongis, sinu infimo 1,5 mm alto, pedicellis 1—2 mm longis elatis; corollarum caerulearum tubo 7,—8 mm longo ventricoso nudo. labia superiore 4,5 mm alta, inferiore 7—7,5 mm diametro.

This proposed species may prove confluent with *S. uliginosa* which it much resembles, differing in the short calyx lips which have a truncate appearance when viewed laterally, the proportionately shorter more elliptical leaves and the more rotund abruptly caudate bracts. However, throughout its rather wide

range *S. uliginosa* although variable shows no tendencies in this direction.

Brasilia: Parana: prope Calmon ad marginem silvae primaevae.

84. **S. congestiflora** Epl. in Rep. Spec. Nov., Beiheft **85**, 54, 1935 per specim. in Brasiliae verisimiliter in prov. Santa Catharina a Sellow (no. 4260) lectum constituta est; typum in herb. Berol. vidi.

Suffrutex altitudine 1—3 m ramulis superne tomentosis; foliorum laminis sat tenuibus 6—15 cm longis, 2,5—8 cm latis, ovato-lanceolatis, acutis, in basi rotundatis, petiolis rufo-villosis 2.5—6 cm longis elatis, margine crenato-serrata, pagina superiore plus minusve hirsuta, inferiore subtomentosa; floribus 3—6 in verticillastris bracteis caducis non visis subtentis, in spicas tomentosas cylindratas demum 8—20 cm longas congestis; calycibus florentibus 6—7 mm longis extus pilis extensis brevibus pubescentibus, in maturitate 9—10 mm longis, labia superiore acutissima subspinosa interdum trimucronata 5 mm longa, inferioris laciniis brevioribus subspinosis sinu infimo 3 mm alto; pedicellis 2—3 mm longis elatis; corollarum tubo 6,5—7,5 mm longo ventricoso intus nudo, labia superiore 4—4,5 mm alta, inferiore 5—6 mm longa.

Brasilia: in Serra do Oratorio, 4400 m.

85. **S. lachnostachys** Benth.. Lab. Gen. et Sp. 267, 1833 et in DC. Prodr. **12**, 319, 1848 per specim. in Brasiliae prov. Parana a Sellow lectum constituta est: typum in herb. Kew., isotypos in herb. Berolin. et Univ. Calif. (Los Angeles) vidi.

Herba perennis altitudine ad 40 cm caulibus in basi prostratis radicantibus pilis brevibus et longioribus extensis vestitis; foliorum laminis 2—5 cm longis, 12—22 mm latis, oblongis vel praesertim infimis interdum oblongo-ovatis, in apice vel rotundatis vel obtusis, in basi rotundatis, margine crenata, pagina superiore fere glabra pilis longis tenuissimis paucis conspersis inferiore dense puberula et pilis longioribus rectis praecipue ad venas frequenter ornata, petiolis 0,5—1,5 cm longis pilosis elatis; floribus 3—6 in verticillastris bracteis perstatis viridibus late ovatis acuminatis 3—6 mm longis pilosis subtentis, glomerulis infimis inter se 1—2 cm distantibus, superioribus in spicas cylindratas 5—10 cm longas nunc approximatis nunc confertis; calycibus florentibus 5—7 mm longis extus pilis glandulosis hirsutis et glandulis sessilibus punctatis, in maturitate 7—10 mm longis, labia superiore rotundata trimucronata, inferioris laciniis acutis, pedicellis subnullis elatis; corollarum caerulearum tubo 6—7 mm longo ad basim invaginato

ventricoso intus nudo, labia superiore 3,5—4,5 mm alta, inferiore rotundata 7—8 mm diametro.

Brasilia: Parana: in campo prope Castro; Curityba ad marginem viae ferreae: Capao Grande, Villa Velha, in campo graminoso; ad marginem viae ferreae. Itaperussu in campo; Registro de Curityba; Fazenda da Fortaleza.

86. **S. procurrens** Benth., Lab. Gen. et Sp. 266, 1833 et in DC. Prodr., 12, 318, 1848 per specim. verisimiliter prope Montevideo a Sellow lectum constituta est; typum in herb. Mus. Berolin., isotypum in herb. Kew. vidi. — *Teucrium rotundifolium* Poir., Dict., Suppl. 2, 767, 1811 (non Schreb., Pl. Vert. Unilab. 42, 1774) per specim. prope Buenos Aires a Commerson lectum constituta est; typum olim in herb. Desfont. hodie in herb. Mus. Par., isotypos in herb. Delessert. et Univ. Calif. (Los Angeles) vidi. *S. hederacea* Larrañaga, Escritos, 2, 12, 1923: 3. 253. pl. 48. 1924.

Herba bella prostrata procurrens nunc glabra nunc glanduloso-villosa; foliorum laminis petiolis gracilibus 2—8 cm longis elatis, rotundis ovatisve, 3—7 cm longis, 2—6 cm latis, in basi saepius cordatis interdum rotundatis margine pulchre crenata, paginis ambobus nunc glabris nunc viscido-villosis; floribus 2—6 in verticillastris bracteis rotundo-ovatis 2—5 mm longis perstatis subtentis, glomerulis inter se 2—10 cm distantibus; calycibus florentibus extus sordide glandulosis, 4 mm longis, in maturitate ad 7 mm longis, labiis hiantibus, superiore longiore, vel integra vel trimucronata, inferioris laciniis mucronatis, pedicellis 3—4 mm longis elatis; corollarum caerulearum tubo 7 mm longo subventricoso intus glabro, labia superiore 4,5 mm alta, inferiore 7—8 mm longa 6—7 mm lata, laciniae mediae margine crispulata.

Brasil: Parana: prope Calmon; Fernandez Pinheiro; Sta. Catharina: in Serra Geral; Rio Grande do Sul: ad Porto Alegre; ad Neu-Württemberg; ad Porto Alegre in locis apricis graminosis uliginosis.

Uruguay: ad Villa de Minas, Montevideo: San Gabriel; Concepcion; in ripas fluminis Tala (Costa del Yi); Pan de Azucar prope Maldonado; ad flumen Sta. Lucia.

Argentina: Buenos Aires ad fossas; Quilmes.

86a. **S. hamulus** sp. nov. per specim. in Mexico prov. Guerrero in regione Mina apud Pilas ad rivulum a Hinton (no. 9884) lectum constituta est; typum in herb. Univ. Calif. (Los Angeles), isotypum in herb. Kew. vidi.

Herba perennis debilis procumbens in luto radicans caulibus gracilibus 30—40 cm longis pilis crassiusculis retrorso-villosis; foliorum laminis acuminato-cordatis 3—5 cm longis

petiolis valde retrorso-villosis 1—3 cm longis elatis, marginibus crenato-serratis, paginis ambobus pilis crassiusculis sparse villosis inferiore punctato-glandulosa; floribus 3 in verticillastris bracteis caducis subtentis glomerulis inter se 1—2,5 cm distantibus in spicis interruptis gracilibus 8—10 cm longis dispositis; calycibus florentibus 3 mm longis hiantibus extus pilis capitato-glandulosis extensis sparse ornatis in maturitate circiter 5 mm longis; corollarum atro-cyanearum tubo 11—12 mm longo, labia superiore 4,5 mm alta.

Mexico: Guerrero: Mina: Pilas, ad rivulum, 1500 m.

86b. S. **Hintonii** Epling sp. nov. per spec. in Mexico prov. Guerrero in regione Mina prope Laguna in quercetis a Hinton (no. 10150) lectum constituta est; typum in herb. Univ. Calif. (Los Angeles), isotypum in herb. Kew. vidi.

Frutex fuscus altitudine 2—3 m ramulis gracilibus superne pilis minutissimis extensis frequenter glandulosis hispidulis mox glabris; foliorum laminis subcoriaceis 3—5 cm longis ovato-ellipticis in apice acutis in basi plus minusve rotundatis et ad petiolos 5—15 mm longos cuneato-angustatis, marginibus caliculoso-serrulatis, paginis ambobus glabris inferiore pallidiore; floribus 3—6 in verticillastris bracteis deciduis subtentis in spicis interruptis 5—8 cm longis glomerulis inter se 1—3 cm distantibus dispositis; calycibus florentibus atro-cyaneis hiantibus 4—6,5 mm longis extus pilis brevibus glandulosis dense puberulis et longioribus capitatis conspersis in maturitate 7—8,5 mm longis; corollarum atro-cyanearum tubo subventricoso 12 ad 18 mm longo, labia superiore 6—10 mm alta.

Mexico: Guerrero: Mina: Laguna in quercetis, 1800 m; Armenia in pineto-quercetis, 2000 m.

14. Sect. **Micranthae.**

Salvia sect. *Calosphace* subsect. *Micranthae* Benth., Lab., Gen. et Sp. 198, 1833; species typica est *S. micrantha*.

Salvia sect. *Calosphace* subsect. *Micranthae Hypolipontes* et *Phthartae* Briq. in Engler u. Prantl, Pflanzenf. IV, 3a, 277, 1897.

Herbae parvae maximam partem annuae caulibus erectis vel prostratis et in nodis radicantibus pilis nunc crispulis nunc extensis vestitis; foliorum laminis plerumque deltoideo-ovatis rarius oblongis sat parvis; floribus tribus et ultra in verticillastris bracteis parvis nunc perstatis nunc caducis subtentis; calycibus pilis nunc crispulis hirtellis nunc extensis glandulosis hispidis, labia superior 5—7-venis; corollarum tubo intus nudo; styli glabri ramo postico brevissimo antico subplano multo longiore; staminum jugo recto vel in basi curvo ad medium connexo, filamentis

gubernacula aequantibus ad fauces positis, antheris e labiau superioris sinu vel inclusis vel partim exsertis; gynobasis corne quam ovula breviore; nuculis in apice saepius angustatis. Herbae insulanac imprimis Antillarum et Galapagos sed etiam in Mexico et Florida incolunt.

Herbae erectae; corollarum tubi 3,5—6 mm longi
  Calyces extus pilis extensis capitato-glandulosis vestiti
    Calyces florentes 3,5 ad 4 mm longi, maturi 5—5,5 mm longi; caules pilis longioribus mollibus extensis vestiti; corollae albae . . . . 91. *S. serotina*
    Calyces florentes 4.5—7 mm longi, maturi 5,5—8 mm longi: corollae caeruleae
      Caules pilis crispis pubescentes vel glabri
        Folia deltoideo-ovata subglabra subtus praesertim ad venas hirtella: antherae in parte e labia superiore exsertae . . . . 94. *S. micrantha*
        Folia deltoideo-oblonga subsagittata utrimque pilis minutis appresso-hirtella subtus cinerea; antherae e labia superiore omnino exsertae . 93. *S. caymanensis*
      Caules pilis extensis longioribus setaceis sparse conspersi . . . . . . 92. *S. podadena*
  Calyces extus pilis crispulis praesertim ad venas hirtelli; folia fere glabra
    Plantae mexicanae floribus bracteis perstatis subtentis . . . . 95. *S. Fernaldii*
    Plantae insularum Galapagos floribus bracteis caducis subtentis . . . .
      Folia subtus tenue cinereo-pubescentia . . . . 97. *S. pseudoserotina*
      Folia subtus dense minute albo-tomentella . . . . 96. *S. insularum*
Herbae prostratae repentes; corollarum tubi 2,5—3 mm longi
  Herbae insularum Galapagos . . . . . 90. *S. prostrata*
  Herbae Antillarum . . . . 88. *S. thomasiana*
    Calyces maturi 4,5 mm longi
    Calyces maturi 2.5—3 mm longi

Folia glabra . . . . 89. *S. parciflora*
Folia hirsuta . . . . 87. *S. tenella*

87. **S. tenella** Sw., Prodr. Veg. Ind. Occ. 14, 1788 per specim. versimiliter a Masson in insula Jamaica lectum constituta est: typum in herb. Mus. Brit. vidi. — *S. bidens* Urb., Symb. Antill. 7. 358, 1912 per specim. in insula Sancti Dominici prope Constanza in pineto a Türckheim (no. 2973) lectum constituta est; typum in herb. Mus. Berolin. vidi. — *S. Tippenhaueri* Urb. in Arkiv. Bot.. 20 A, no. 5, 45, 1926, per specim. in Haiti in Massif de la Selle in Morne Cabaio a Ekman (no. 1627) lectum constituta est; typum in herb. Krug. et Urb.. isotypum in herb. Stockh. vidi. — *S. Abbottii* Urb. in Rep. Spec. Nov. 18, 195. 1922 per specim. in Haiti ad missionem Fonds Varettes a Leonard (no. 3749) lectum constituta est; typum in herb. Krug. et Urb., isotypos in herb. Smithson et Gray. vidi.

Herba tenella bella prostrata repens in nodis radicans caulibus gracilibus nunc pilis brevibus extensis irrasis puberulis nunc longioribus substrictis rarius brevibus crispulis vestitis, internodiis saepius 1—3 cm longis; foliorum laminis tenuibus deltoideo-rotundatis etiam subreniformibus 4—20 mm latis petiolis gracilibus 3—10 mm longis elatis. margine serrato-crenata. paginis ambobus hirsutis; floribus 1—3 in verticillastris bracteis late ovatis perstatis 1—1.5 mm longis subtentis in spicis interruptis gracillimis interdum ramosis glandulosis dispositis: calycibus florentibus vix 2 mm longis in maturitate 2,5 mm longis extus pilis clavato-glandulosis longioribus vestitis, labia superiore modo retusa modo obscure trimucronata; corollarum tubo 2—3 mm longo, labia superiore 0,8—1,2 mm alta. inferiore 1,5—3 mm longa; staminum gubernaculo fere recto.

In habit. form and pubescence of leaves and floral structure these species are essentially the same. The synonymy of *S. tenella* and *S. Tippenhaueri* can scarcely be questioned. *S. Abbottii* differs from these only in that the pubescence is curled instead of straight. *S. bidens* is somewhat coarser, however, and is characterized by a dense extended pubescence on the stems composed of hairs similar to those on the leaves of the above mentioned species. In one specimen from the type locality both long hairs and short curled ones are present. It seems probable therefore that further exploration will show the essential unity of all. The flowers of *S. bidens* are slightly larger.

Jamaica: Cinchona, Farm Hill; Haiti: Massif de la Selle, Jardins Bois Pin, Ganthier, Morne des Comissaires; Santo Domingo: Constanza, San Jose de Ocoa, Cordillera Central: Valle Nuevo.

88. **S. thomasiana** Urb., Symb. Antill. 7. 358, 1912 per specim. in insula St. Thomas a Ehrenberg (no. 297) lectum constituta est: typum in herb. Berolin., isotypos in herb. Kew., Lamark., et Univ. Cantabr. vidi.

Herba tenella prostrata in nodis radicans caulibus gracilibus hirtellis superne pilis glandulosis extensis sparse vestitis, internodiis 2—3 cm longis; foliorum laminis deltoideo-subrotundis diametro 1—2 cm: pagina superiore sparse hirsuta. inferiore pallidiore hirtella, margine subcrenata, petiolis 1—1,5 cm longis villosulis elatis; floribus 1—3 in bracteorum perstatorum 1—2 mm longorum axillis in spicis interruptis gracilibus dispositis, pedicellis 1—2 mm longis elatis; calycibus florentibus 2,5 mm longis, in maturitate 4,5 mm longis, extus pilis glandulosis extensis sparse vestitis, labia superiore subintegra vel obscure trimucronata, inferioris laciniis ovatis; corollarum tubo 2 mm longo, labia superiore 1 mm alta, inferiore 2 mm longa.

Insula St. Thomas.

89. **S. parciflora** Urb. in Rep. Spec. Nov. 18, 368, 1922 per specim in insula Sancti Dominici, prov. Santiago ad Mao a Abbott (no. 1052) lectum constituta est; typum in herb. Krug. et Urb., isotypum in herb. Smithson. vidi.

Herba tenella bella prostrata repens in nodis radicans caulibus gracilibus glabris vel pilis minutis crispis sparse puberulis. internodiis saepius 1—3 cm longis; foliorum laminis deltoideo-rotundatis etiam subreniformibus 4—20 mm latis, petiolis gracilibus 3—10 mm longis elatis. margine leniter paucicrenata etiam subintegra paginis ambobus glabris glandulis sessilibus conspersis inferiore pallida: floribus 1—3 in verticillastris bracteis ovatis perstatis 1—2 mm longis subtentis, in spicis interruptis gracillimis glandulis sessilibus conspersis dispositis; calycibus florentibus 2,5 mm longis in maturitate vix longioribus extus pilis clavato-glandulosis longioribus conspersis; corollarum tubo 2,5 mm longo. labia superiore 1,2 mm alta, inferiore 2,5 mm longa, staminum guvernaculo in basi curvo-dilato.

Haiti: Port de Paix: Jean Rabel, valle des Trois Rivieres; Cabaret: Santo Domingo: Santiago: Mao, Valle de Cibao; Azua: Valle de San Juan; Monte Cristi: Las Rosas.

90. **S. prostrata** Hook. f. in Trans. Linnean Soc. 20, 200, 1847 per specim. in insulis Galapagos (James Island) a Darwin lectum constituta est; typum in herb. Kew. vidi.

Herba tenella prostrata radicans caulibus gracilibus sparse hirtellis; foliorum laminis deltoideo-ovatis, diametro circiter 1 cm, obtusis. in basi truncatis, margine convexiuscula, pro rata valde crenata, paginis ambobus sparse hirtellis, petiolis

8—10 mm longis hirtellis elatis; floribus binis in bractearum linearium 1,5—2,5 mm longarum axillis in racemis 1,5 cm longis hirsutulis dispositis; calycibus maturis 5 mm longis; corollis nuculisque non visis.

Ins. Galapagos: James Island.

91. **S. serotina** L., Mantissa 1, 25, 1770 per specim. hortatum ab Arduini constituta est; typum verum in herb. Linn. non reperire potui.

Herba parva annua altitudine 20—40 cm caulibus ascendentibus pilis longioribus saepius extensis rarius subcrispis cinereis; foliorum laminis 1—2,5 cm longis ovatis in apice obtusis. in basi rotundatis frequenter subtruncatis, margine subintegra. paginis ambobus molliter cinereo-pubescentibus inferiore pallidiore, petiolis ad 1,5 cm longis elatis; floribus 1—3 in verticillastris bracteis parvis ovatis tarde deciduis subtentis, pedicellis circiter 2 mm longis elatis; calycibus florentibus 3,5—4 mm. rarius 5 mm longis, in maturitate 5—5,5 mm longis, extus molliter glanduloso-hirtellis, labia superiore obtusa subintegra, inferioris laciniis acutiusculis; corollarum albarum rarius pallide caerulearum tubo 3,5—4 mm longo, labia superior vix 1 mm alta. inferiore 2,5 mm longa.

Arduini's plant, upon which the Linnaean name is based. has apparently been lost. The garden specimen in the Linnaean herbarium is a puzzle. It is large-leaved for *S. serotina* and the stems are crisp pubescent and glandular. The calyces. however. are scarcely 3 mm long.

Florida: Upper Matecumbe Key, Key West; Jamaica: Bahama Isl.: New Providence, Andros, Ragged, Hog, Acklins. Exuma Chain, Berry. Inagua, Grand Turk, East Caicos, Eleuthera. Mangrove Cay, Long Cay; Bermuda: Bermuda, Nonesuch, Long Bird, St. Davids; St. Croix; St. Jan; St. Thomas; Tortola; Dominica; Martinique; Guadaloupe; St. Eustatius; Barbados.

92. **S. podadena** Briq. in Ann. Conserv. et Jard. bot Genève 2, 131, 1898 per specimen in Mexico prov. Oaxaca a Galeotti (no. 639) lectum constituta est; typum in herb. Delessert. vidi. — *S. ageratifolia* Fern. in Proc. Am. Acad. 36, 499, 1901 per specimen in Mexico prov. Oaxaca a Conzatti et Gonzalez (no. 1049) lectum constituta est; typum in herb. Gray., isotypum in herb. Smithson. vidi.

Herbae annuae erectae altitudine ad 40 cm ramis dichotomis ad facies hirtellis et infime pilis extensis setaceis plus minusve glandulosis vestitis, internodiis 3—8 cm longis; foliorum laminis ovatis 2—3,5 cm longis. 1,5—3 cm latis, in apice

obtusis in basi cordatis et petiolis 1—2,5 cm longis elatis, margine crenato-serrata, pagina superiore glabra inferiore hirtella ambobus interdum pilis setaceis sparse conspersis; floribus 1—3 in verticillastris bracteis deciduis ciliatis subtentis, glomerulis inter se 1—2 cm distantibus: calycibus florentibus extus ad venas pilis setaceis glandulosis sparse hispidis 5,5—6 mm longis, in maturitate 7—8 mm longis, labia superiore 5-venis; corollarum tubo 4 ad 4,5 mm longo, labia superiore 2 mm alta, inferiore 4—4,5 mm longa.

Mexico: Hidalgo: Ixmiquilpan; Puebla: Tehuacan; Oaxaca: Oaxaca.

93. **S. caymanensis** Millsp. et Uline ex Millsp. in Field. Mus. Bot. 2, 94, 1900 per specim. in insulae grand Cayman dictae sinu Spot Bay a Millspaugh (no. 1295) lectum constituta est; typum in herb. Mus. Field. vidi. — *S. serotina* var. *sagittaefolia* Millsp., loc. cit., p. 95, per specimen in eadem insula a Millspaugh (no. 1391) lectum constituta est; typum in herb. Mus. Field. vidi.

Herba verisimiliter annua ut videtur stricta altitudine 45 cm et ultra, caulibus molliter pubescentibus; foliorum laminis deltoideo-oblongis 3—4.5 cm longis, 12—20 mm latis subsagittatis, in apice obtusis in basi truncatis, marginibus fere rectis, subserratis, paginis ambobus mollissime appresso-hirtellis, inferiore cinerea, petiolis ad 1.5 cm longis elatis; floribus 1—3 in bractearum parvarum perstatarum axillis dispositis in spicis interruptis 5—8 cm longis approximatis; calycibus florentibus circiter 5 mm longis, extus pilis extensis longioribus capitato-glandulosis ornatis, in maturitate 6,5 mm longis; corollarum caerulearum tubo 5,5—6 mm longo, labia superiore 1,5 mm alta, inferiore 5—5,5 mm longa; antheris e labia superiore in toto exsertis.

Grand Cayman Island.

94. **S. micrantha** Vahl, Enum. 1, 235, 1805 per specimen hortatum constituta est; speciminis veri verisimiliter typici icon vidi. — (?) *Jungia micrantha* Moench. Meth. Suppl. 141, 1802 per specim. hort. constituta est; typum non vidi. — (?) *S. bullata* Ort., Hort. Matr. Dec. 109, 1797 per specimen hortatum constituta est; typum non vidi. — *S. orbicularis* Benth., Bot. Voy. Sulph. 151, 1844 per specimen in Panama a Sinclair lectum constituta est; typum in herb. Kew. vidi.

Herba parva annua altitudine 20—40 cm caulibus ascendentibus pilis brevibus crispulis hirtellis rarius glabratis; foliorum laminis 1,5—4,5 cm longis, deltoideo-ovatis, in apice obtusis in basi saepius truncatis, margine crenata, paginis ambobus

subglabris, praesertim subtus ad venas pilis brevibus hirtellis, petiolis ad 1.5 cm longis elatis; floribus maximam partem 3—6 in verticillastris bracteis parvis nunc perstatis nunc tarde deciduis subtentis; calycibus florentibus 3,5—5,5 mm longis, in maturitate 6 (rarius 5,5)—8 mm longis, extus pilis extensis glandulosis vestitis; corollarum caerulearum rarius albarum tubo 4—6 mm longo, labia superiore 1—1,5 mm alta, inferiore 2,5—4 mm longa.

Florida: Dade, De Soto, Monroe, Hillsborough. Citrus, Manatee, Dry Tortugas, Loggerhead Key, No Name Key, Key West, Elliot's Key, Big Pine Key, Cudjoes Key; Bahamas: Great Bahama, New Providence, Andros, Abaco, Eleuthera; Cuba: Sta. Clara, Habana, Matanzas, Isla de Pinos; Jamaica; Santo Domingo; Haiti; St. Croix; St. Kitts; Guadaloupe; Grenada: Yucatan: Izamal, Cozumel; Honduras: Muggers Isl. (? Mauger Cay); Panama: Manzanillo Isl., Porto Bello.

var. **Blodgettii** Epling comb. nov. — *S. Blodgettii* Chapm., Flora Southern U. S. 319, 1883 per specimen in Florida a Blodgett lectum constituta est: specim. vera in herb. Smithson. et Mus. Field. vidi.

Forma floribus majoribus; calycibus florentibus 5,5—7 mm longis, in maturitate 7,5—8 mm; corollarum tubo 5,5—7,6 mm longo, labia superiore 1,2—2 mm alta, inferiore 5—5,5 mm longa.

Florida: Key West, Dry Tortugas: Cuba: Habana.

95. S. **Fernaldii** Standl. in Field. Mus. Pub. Bot. 8, 41, 1930 per specim. in Yucatan pr. Chichen Itza a Millspaugh (no. 1634) lectum constituta est; typum in herb. Mus. Field. vidi.

Herba annua diffusa altitudine 30—60 cm caulibus gracilioribus pilis brevibus crispulis ad facies sparse hirtellis et maximam partem longioribus extensis tenuissimis plus minusve ornatis, internodiis elongatis 3—8 cm longis; foliorum laminis deltoideo-ovatis 1—2,5 cm longis, in apice obtusis in basi saepius truncatis. petiolis gracilibus ad 1,5 cm longis elatis margine crenato-serrata. paginis ambobus fere glabris inferiore ad venas sparse hirtella pallida; floribus plerumque tribus in verticillastris bracteis subperstatis parvis subtentis pedicellis gracilibus 2—3 mm longis elatis; calycibus florentibus 4—5 mm longis, in maturitate 5,5 ad 6 mm longis extus sparse hirtellis, labia superiore obtusa, inferioris laciniis acutis; corollarum tubo 4 mm longo, labia superiore 1,5 mm alta, inferiore 3.5—4 mm longa.

Yucatan: Calotmul, Chichen Itza, Pocoboch, Kancabsonat, Izamal.

96. S. **insularum** Epl. in Rep. Spec. Nov., Beiheft 85, 66, 1935 per specim. in insulis Galapagos (Chatham Island) a Wood

lectum constituta est; typum in herb. Kew., isotypum in herb. Univ. Calif. (Los Angeles) vidi.

Herba ramis ascendentibus praecipue in sulcis pubescentibus; foliorum laminis sat tenuibus, 2—6 cm longis, 1,5—4,5 cm latis, deltoideis, in apice rotundatis obtusisve, in basi subtruncatis, margine crenata, pagina superiore fere glabra, inferiore dense minutissime albotomentella, petiolis 1—2 cm longis elatis; floribus 2—25 in verticillastris, bracteis ovatis acuminatis 2—4 mm longis caducis subtentis, glomerulis infimis inter se 2—3 cm distantibus, supremis in spicis confertis, pedicellis hirtellis 3—4 mm longis elatis; calycibus florentibus 4 mm longis extus hirtellis et glandulis sessilibus conspersis, in maturitate 6 mm longis, labia superiore 2 mm longa subtruncata breviter mucronata, laciniis inferioribus 1,5 mm longis acuminatis; corollarum tubo 4,5 mm longo, superne sub labiam inferiorem dilato intus nudo, labia superiore erecta 2 mm alta, inferiore subrotunda 5—6 mm diametro.

Galapagos: Chatham Isl.

97. **S. pseudoserotina** Epl. in Rep. Spec. Nov. Beiheft 85, 67. 1935 per specim. in insulis Galapagos (Charles Isl.) a Stewart (no. 3339) lectum constituta est; typum in herb. Acad. Sci. Calif., isotypos in herb. Smithson., Gray. et hortorum bot. Nov. Eborac. et Missouri. vidi. — *S. floriana* Howell in Proc. Calif. Acad. Sci. 21, 332, 1935 per specim., in eodem loco a Howell (no. 9336) lectum constituta est.

Herba perennis caulibus procumbentibus crispule pubescentibus; foliorum laminis 1,5—4 cm longis, 1,5—3 cm latis, late ovatis etiam subrotundis, in apice vel obtusis vel rotundatis inferiore tenuissime cinereo-tomentella, venis prominulo-reticulatis, petiolis 1 cm longis elatis; floribus 3—4 in verticillastris bracteis lanceolatis 1—2 mm longis caducis subtentis, glomerulis inter se 2—8 mm distantibus in spicis interruptis 3—6 cm longis dispositis; calycibus florentibus 4—4,5 mm longis, extus praesertim ad venas hirtellis, 13-venis, labia superiore rotundata vix 1 mm longa, inferioris laciniis ovato-acuminatis aequilongis, pedicellis 1—2 mm longis elatis; corollarum tubo 3—3,5 mm longo, labia superiore 1,5 mm alta, inferiore 3 mm longa.

Galapagos: Charles Isl., 1200—1550 ped.

15. Sect. Rhombifoliae.

Subsect *Rhombifoliae* Epl. in Rep. Spec. Nov., Beiheft 85, 60, 1935. Species typica est *S. rhombifolia*.

Herbae annuae erectae ramosae foliis sat tenuibus deltoideo-ovatis subglabris; floribus saepius tribus in verticillastris bracteis parvis caducis subtentis in spicas interruptas dispositis; calycum

labia superiore 5-venis truncato-obtusa obscure trimucronata interdum integra; corollarum sat parvarum caerulearum tubo intus nudo cylindrato; labia inferiore quam superior longiore, lacinia media pro rata grande, superiore recta vix concava: staminibus ad fauces positis e labia superiore breviter exsertis, jugo ad medium vel infra medium connexo, gubernaculo saepius in dentem parvum ad connexum dilato rarius integro; styli glabri ramo postico interdum brevissimo, antico canaliculato obtuso longiore; gynobasis cornu ovula subaequante. Plantae andinae a Venezuela usque ad Chile disseminatae sunt.

Corollarum tubi 4 mm longi, labiae superiores 2 mm altae; staminum juga 3 mm longa 98. *S. occultiflora*
Corollarum tubi 5—6 mm longi, labiae superiores 3,5—4 mm altae; staminum juga 9 ad 12 mm longa
  Calyces extus pilis extensis glandulosis vestiti in maturitate 8—12 mm longi; plantae plus minusve glanduloso-hispidae . . . 99. *S. rhombifolia*
  Calyces extus pilis brevibus eglandulosis hispiduli in maturitate 6—7 mm longi; plantae fere glabrae . . . . 100. *S. paposana*

98. **S. occultiflora** Epl. in Rep. Spec. Nov., Beiheft 85, 61, 1935 per specim. in Venezuelae prov. Merida in Savannas de Lagunillas a Jahn (no. 670) lectum constituta est: typum in herb. Smithson. vidi.

Herbae annua tenella erecta ramosa caulibus pilis brevioribus subcrispulis et longioribus glandulosis extensis sparse vestitis; foliorum laminis tenuibus 1.5—2,5 cm longis, 10—18 mm latis, ovatis, in apice obtusiusculis, in basi rotundato-truncatis, margine sat convexa fere integra, paginis ambobus breviter et sparse hirtellis, petiolis ad 1.5 cm longis elatis; floribus tribus in verticillastris bracteis caducis 1,5—2 mm longis ovatis subtentis, glomerulis demum inter se 0,5—2 cm distantibus; calycibus florentibus 5.5—6 mm longis extus ad venas pilis longioribus glandulosis sparse conspersis in maturitate 7 mm longis, pedicellis 2—3 mm longis elatis; corollarum tubo 4 mm longo, labia superiore 2 mm alta, inferiore 3,5 mm diametro; staminibus ad fauces positis, filamentis 0,7 mm longis, jugo ad medium connexo 3 mm longo, gubernaculo 1.5 mm longo ad connexum in dentem parvum retrorsum dilato.

Venezuela: Merida: in Savannas de Lagunillas.

99. **S. rhombifolia** R. et P., Syst. Veg. 347, 1798 et in Fl. peruv. 1, 26, t. 36, f. b. 1798 per specim. in Peruviae prov. Camana in collibus arenosis Lomas de Atiquipa et Pongo appellatis et in

altis Chancay a Ruiz et Pavon lectum constituta est; specim. certum in herb. Mus. Berolin. vidi. — *S. pilosa* Vahl, Enum. 1, 240, 1805 per specim. in Peruviae prov. Lima a Dombey lectum constituta est; specim. verum in herb. Mus. Par. vidi. — *S. foliosa* Benth. in Bot. Reg. 17, t. 1429, 1831 per specim. hort. e seminibus „in Mexico a Graham lectis" constituta est; typum in herb. Kew. vidi. — *S. Tafallae* Benth., Lab. Gen. et Sp. 260, 1833 et in DC. Prodr. 12, 311, 1848 per specim. in Peruviae prov. Junin ad Tarma a Tafalla lectum constituta est; typum verum olim in herb. Lamb. non reperire potui; isotypos in herb. Boiss. et Berolin. vidi.

Herba annua erecta altitudine 15—50 cm ramis ascendentibus pilis extensis glandulosis vestitis; foliorum laminis 3 ad 6 cm longis 3—6 cm latis, rotundo-deltoideis, obtusis, in basi rotundato-truncatis, margine crenato-serrata, paginis ambobus subglabris praecipue inferiore ad venas pilis subappressis sparse hirtella, petiolis 5—15 mm longis supremis interdum subnullis; floribus saepius tribus in verticillastris bracteis ovato-lanceolatis ciliatis caducis 1—3 mm longis subtentis, infimis in foliorum supremorum axillis frequenter sitis, glomerulis inter se 1—3 cm distantibus, rarius confertis; calycibus florentibus 5,5—6,5 mm longis late cylindratis extus pilis extensis glandulosis vestitis in maturitate 8—12 mm longis 4—5 mm diametro, labia superiore rotundata mucronata 2—2,5 mm alta, inferioris laciniis acuminatis 2 mm longis, pedicellis 4—12 mm longis elatis; corollarum tubo 5—6 mm longo sub labiam inferiorem lenissime ventricoso, labia superiore 3,5—4 mm alta, inferiore 7 mm longa lacinia media 6—8 mm lata, bifida; staminibus 3—4 mm exsertis, filamento 1,5 mm longo, jugo fere 1 cm longo 2 mm infra medium connexo, gubernaculo 2,5—3 mm longo oblongo ad connexum in dentem obtusum frequenter dilato.

Peruvia: Lima: in decliv. graminoso humido prope Matucana, 8000 ped.; inter saxa in colle ad Matucana, 8000 ped.; in decliv. glareoso prope San Geronimo, 5000 ped.; prope Lima in arenosis humidis; prope Atocongo in decliv. arenosis, 250—500 m; ad Rio Blanco prope pagum Chicla 12000—13000 ped.; in valle fluminis Rimac; Junin: prope Ocopa, 3300 m; prope Huancayo, 3300—3500 m prope Tarma 3000—3200 m. — Arequipa: prope Mollendo, 200 ad 600 m. — Cuzco: in valle Uribamba in regione Caicay, 3100 m; in decliv. aprico saxoso, 3400—3450 m, prope Checacupe.

Bolivia: prope Espada ad Sorata in locis subfrigidis, 2600 ad 2700 m. — Chile: prope „Cobija, Iquique et Arica".

100. **S. paposana** Philippi, Fl. Atacam. 39, 1860 per specim. in Chile in deserto arido Atacama ab Hueso Parada 25° 26′

austr. usque ad Miguel Diaz 24° 36′ austr. a Philippi lectum constituta est; typum non vidi. — *S. rhombifolia* var. *glabrior* Benth., Lab. Gen. et Sp. 259, 1833 et in DC. Prodr. **12**, 311, 1848 per specim. in Peruviae prov. Lima prope oppidum Lima a Cruikshanks lectum constituta est; typum in herb. Kew. vidi.

Herba annua erecta altitudine 30—50 cm, ramis ascendentibus, sparse hirtellis, fere glabris; foliorum laminis 4—6 cm longis, 2.5—4 cm latis, leniter acuminatis, rarius obtusis, in basi rotundato-truncatis, margine crenato-serrata, paginis ambobus fere glabris, petiolis 5—15 mm longis, crispule pubescentibus; floribus saepius tribus in verticillastris bracteis ovato-acuminatis glabris caducis 1—2 mm longis subtentis, glomerulis inter se 1—3 cm distantibus; calycibus florentibus 5 mm longis, extus ad venas sparse hispido-hirtellis, in maturitate 6—7 mm longis 3—3,5 mm diametro, labia superiore rotundata mucronata 2 mm longa, inferioris laciniis subaequilongis acuminatis, pedicellis gracilibus hirtellis 3—10 mm longis elatis; corollarum caerulearum tubo 5 mm longo, cylindrato, intus nudo, labia superiore 3.5—4 mm alta, inferiore 7 mm longa, lacinia media 6—8 mm lata bifida; filamento 1,5 mm longo, jugo 10—12 mm longo, infra medium connexo, gubernaculo 3 mm longo obtuso.

Peruvia: Lima: prope Lima; in praeruptis saxosis prope San Geronimo, 500 ped.; ad Santa Clara; prope Lurin ad Lima; in Lomas de Amancaes; Chile: Antofagasta: in declivitate glareosa prope Tocopilla objecta Caleta Duendes.

16. Sect. Siphonantha.

Subsect. *Siphonantha* Epl. in Rep. Spec. Nov., Beiheft **85**, 125, 1936. — Species typica est *S. pichinchensis*.

Frutices vel suffrutices foliis sat amplis; floribus in spicis interruptis dispositis bracteis caducis saepe caeruleis subtentis; calycum labia superiore 3—7-venis; corollarum atro-caerulearum tubo cylindrato superne sat ampliato nec ventricoso recurvo arcuato-ascendente intus nudo; staminibus e galea sat exsertis; staminum jugo ad medium connexo, gubernaculo infra tubi medium extendente integro; stylo glabro. Plantae boreali-andinae.

Staminum juga 17—18 mm longa . . . . 102. *S. cyanocephala*
Staminum juga 35—42 mm longa
  Calycum labiae superiores 7-venis . . . 101. *S. Lobbii*
  Calycum labiae superiores 3-venis rarius
    sub-5-venis . . . . 103. *S. pichinchensis*

At least two other species related here have been collected, one by Lobb presumably in Ecuador and one by Triana in

Colombia. The specimens are so fragmentary however and with so little data that I have preferred not to name them.

101. **S. Lobbii** Epl. in Rep. Spec. Nov., Beiheft 85, 126, 1936 per specim. in Ecuador vel Peruvia a Lobb (no. 293) lectum constituta est; typum in herb. Kew., isotypum in herb. Mus. Vindob. vidi.

Frutex ut videtur ramulis villosis internodiis 2—3 cm longis; foliorum laminis 3—4,5 cm longis, 1,5—2,5 cm latis, anguste ovatis, acutis, in basi rotundato-subcordatis, margine serrata. paginis ambobus sparse villosulis inferiore pallidiore, petiolis 8—12 mm longis elatis; floribus circiter tribus in verticillastris bracteis ovatis caducis 3—4 mm longis subtentis glomerulis in spicas interruptas breves approximatis; calycibus florentibus 10 mm longis extus hirtellis et pilis glandulosis paucis conspersis, labiis 2.5 mm longis, superiore acuta 7-venis, inferioris laciniis acuminatis. in maturitate non visis; corollarum caerulearum tubo 22 mm longo intus nudo superne gradatim ampliato, labia superiore 6 mm alta, inferiore 5—6 mm longa; staminum filamentis 5—5,5 mm longis, jugo 35 mm longo ad medium connexo, gubernaculo 15—16 mm longo.

? Ecuador: sine loco.

102. **S. cyanocephala** Epl. in Rep. Spec. Nov., Beiheft 85, 126, 1936 per specim. in Colombia prov. Tolima inter La Ceja et Agua Bonita ad viam Quindio juxta Rio Tachero a Killip et Hazen (no. 9539) lectum constituta est; typum in herb. Smithson., isotypos in herb. Acad. Sci. Phil., et horti bot Nov. Eborac. vidi.

Suffrutex speciosus caulibus superne molliter pubescentibus ut videtur subviscidis; foliorum laminis 7—10 cm longis, 4—7 cm latis, late ovatis, leniter acuminatis, in basi pulchre rotundatis subcordatis, margine serrata, pagina superiore subglabra, hirtella, inferiore sparse pubescente, petiolis puberulis 4—8 cm longis elatis; floribus 5—6 in verticillastris bracteis pulchre caeruleis speciosis caducis subtentis. glomerulis inter se 1—3 cm distantibus in spicas interruptas laxas ample paniculatas dispositis; calycibus florentibus extus sparse villosis 10 mm longis, in maturitate 14 ad 15 mm longis chartaceis perlucidis, labiis hiantibus, superiore subrecurva 3-venis truncata mucronata, inferioris laciniis acuminatis infra medium connatis, pedicellis 10—12 mm longis molliter pubescentibus elatis; corollarum caerulearum tubo 20 mm longo intus nudo subcylindrato recurvo-ascendente, labia superiore 4 mm lata, inferiore 5 mm longa; staminum filamentis 4,5 mm longis, jugo 17 mm longo, ad medium connexo, gubernaculo 9—10 mm longo.

Colombia: Tolima: inter La Ceja et Agua Bonita ad viam Quindio juxta Rio Tochero in silvis. 2500—3100 m: in Monte Quindio.

103. **S. pichinchensis** Benth., Pl. Hartweg. 243, 1846 per specim. in Ecuador prov. Pichincha in silvis Guayan in declivitate occ. montis Pichincha a Hartweg lectum constituta est; typum in herb. Kew. vidi. — *S. siphonantha* Briq. in Ann. Conserv. et Jard. Bot. Genève. **2**, 172, 1898 per specim. in Ecuador in declivitate occ. montis Pichincha a Jameson (no. 797) lectum constituta est: typum in herb. Delessert. vidi.

Frutex diffusus altitudine ad 3 m ramulis hirtellis mox glabris; foliorum laminis late ovatis 6—12 cm longis, 4—8 cm latis, breviter acuminatis acutisve. in basi nunc leniter cordatis nunc rotundatis saepius obliquis. margine serrata, paginis ambobus glabris nisi ad venas puberulis. petiolis 2—8 cm longis elatis; floribus 3—6 in verticillastris bracteis rotundo-caudatis glabris 1—2 cm longis caeruleis caducis subtentis, glomerulis demum inter se 1—1,5 cm distantibus, in spicas saepe paniculatas confertis; calycibus florentibus extus vel glabris vel hirtellis intus hispidulis 12—13 mm longis, labia superiore rotundato-mucronata, venis praecipuis 2—3, inferioris laciniis acuminatis 1,5—3 mm longis, in maturitate 15—18 mm longis, pedicellis 8—10 mm longis elatis; corollarum pulcherrime atrocaerulearum tubo 20—24 mm longo arcuato-ascendente cylindrato intus nudo superne infundibuliforme. labia superiore 11—12 mm alta, inferiore 10—12 mm diametro; staminum filamentis 4 mm longis, jugo 35—42 mm longo paulo infra medium connexo, gubernaculo 16—20 mm longo.

Ecuador: ad viam silvestrem inter Alaspungo et Gualca; in declivitate occ. montis Pichincha, in silvis Guayan; in silvis umbrosis montis Tunguragua, 8000—9000 ped.; ad Napo; ? Colombia: in declivitate occ. montis Corazon; inter Trintilla et Muido.

17. Sect. Macrostachyae.

Salvia sect. *Calosphace* subsect. *Macrostachyae* Benth. in DC. Prodr. **12**, 322, 1848 per quinque species constituta est; species typica est *S. macrostachya*.

Suffrutices vel herbae perennes crassae foliis amplis ovato-cordatis; floribus saepius in spicas cylindratas elongatas confertis bracteis perstatis vel caducis subtentis; calycibus 5—9-venis coriaceis saepe coloratis; corollarum atro-caerulearum rarius albarum tubo cylindrato intus nudo, labia inferiore quam superior subduplo longiore; genitalia longissime exserta; staminum jugo

ad basim connexo supra connexum elongato, gubernaculo subintegro; styli glabri ramo postico interdum brevissimo: nuculis interdum complanato-angulatis et in apice saepe emarginatis. Plantae boreali-andinae.

Flores in spicis interruptis dispositi . . . 106. *S. atrocalyx*
Flores in spicas densas congesti
  Folia plerumque 8—25 cm longa: corollae caeruleae
    Bracteae perstatae vel tarde deciduae 1—3 cm longae
      Calyces extus ubique villosi virides 105. *S. macrostachya*
      Calyces ad basim villosi ad apices glabri colorati . . . . 104. *S. speciosa*
    Bracteae caducae 1—1,5 cm longae. . 106. *S. atrocalyx*
  Folia plerumque 5—7 cm longa; corollae albidae . . . . 107. *S. psilostachya*

104. **S. speciosa** Presl ex Benth., Lab. Gen. et Sp. 272, 1833 et in DC. Prodr. **12**, 323, 1848 per specim. in Peruvia ad Huanancenio a Haenke lectum constituta est; typum in herb. Mus. Pragae, isotypum mancum praecocem in herb. Kew. vidi. — *S. Mathewsii* Benth., Lab. Gen. et Sp. (Suppl.) 722, 1835 et in DC. Prodr. **12**, 323, 1848 per specim. in Peruvia ad Purrochuca et Obrajillo a Mathews herb. horti. bot. Nov. Eborac. et Vindob. vidi.

Suffrutex altitudine ad 4 m ramis in nodis pilosis caetero glabris; foliorum laminis membranaceis 8—25 cm longis, 5—14 cm latis, ovato-cordatis, acutis, margine crenata, paginis ambobus subglabris, ad venas sparse pilosis, juvencum subtus tomentosis, petiolis 3—10 cm longis elatis; floribus tribus in verticillastris bracteis glabratis ciliatis deltoideo-ovatis acuminatis perstatis vel tarde deciduis 10—15 mm longis subtentis, glomerulis in spicas speciosas pilis extensis glandulosis ornatas in maturitate elongatas 30—40 cm longas confertis; calycibus florentibus 15 ad 18 mm longis, superne glabris coloratis, ad basim dense glanduloso-villosis, in maturitate 20 mm longis, labia superiore obtusa, inferioris laciniis acutis, pedicellis glandulosis 10—15 mm longis elatis; corollarum atro-caerulearum tubo 15—17 mm longo, labia superiore 5—8 mm alta, inferiore 10—14 mm longa; staminum filamentis 7 mm longis, jugo 50—55 mm longo longissime exserto, gubernaculo 14—16 mm longo.

Peruvia: Lima ad Purrochuca et Obrajillo; ad ripas saxosas Rio Chillon infra Obrajillo, 2300—2500 m; ad Chinchapolca prope Mito, 9500 ped.; prope Yanajuanca, 10,000 ped.; circa urbem Huanacenio.

105. S. **macrostachya** Kunth in Humboldt et Bonpland, Voy., Nov. Gen. et Sp. Pl. 2, 298, 1817 per specim. in Ecuador prope Quito, Latacunga et Cuenca a Humboldt et Bonpland lectum constituta est; specim. certum in herb. Mus. Par. vidi.

Suffrutex altitudine ad 1,5 m ramis crassis pilosis; foliorum laminis 6—18 cm diametro, rotundato-cordatis, petiolis 2—6 cm longis piloso-villosis supremis subnullis elatis, pagina superiore molliter hirsuta, margine crenata; floribus in verticillastris bracteis perstatis orbiculatis acuminatis villosulis ciliatis 15—30 mm longis subtentis, glomerulis in spicas densas 10—20 cm longas confertis; calycibus florentibus 15—20 mm longis extus hispido-villosis glandulosis, in maturitate 25 mm longis, labiis 6 mm longis, superiore et inferioris laciniis acutis, pedicellis 3—4 mm longis elatis; corollarum caerulearum tubo 20 mm longo intus nudo subcylindrato, labia superiore 7 mm alta, inferiore 12—13 mm longa ampla; staminum filamentis 5 mm longis, jugo 21—24 mm longo, gubernaculo 5—6,5 mm longo.

Ecuador: prope Quito; prope Cuenca; Colombia: El Cauca: ad Popayan prope La Cruz; prope Yacuangua (Pasto): prope Quaranda.

106. S. **atrocalyx** Epl. in Rep. Spec. Nov., Beiheft 85, 65, 1935 per specim. in Peruviae prov. Junin ad Carpapata supra Huacapistana ad silvae marginem a Killip et Smith (no. 24401) lectum constituta est; typum in herb. Smithson., isotypum in herb. Univ. Calif. (Los Angeles) vidi.

Herba perennis crassa altitudine ad 3 m et ultra, ramis superne pilis extensis glandulosis longioribus sparse vestitis verisimiliter viscidis; foliorum laminis 10—15 cm longis, 6—10 cm latis, ovato-cordatis, in apice breviter acuminatis, margine serrata, paginis ambobus pilis longioribus glandulosis sparse villosis, petiolis 3—6 cm longis elatis; floribus 3—6 in verticillastris, bracteis atro-purpureis rotundatis concavis glabratis 10—15 mm diametro caducis subtentis, glomerulis demum inter se 2—5 cm distantibus in spicis interruptis laxis paniculatis glanduloso-pilosis dispositis, pedicellis demum 15—18 mm longis elatis; calycibus florentibus atropurpureis 10—12 mm longis extus ad basim villosis in maturitate 20—22 mm longis, labia inferiore quam superior longiore; corollis nuculisque, non visis.

Peruvia: Junin: ad Carpapata supra Huacapistana ad silvae marginem, 2700—3200 m.

107. S. **psilostachya** Epl. in Rep. Spec. Nov., Beiheft 85, 65, 1935 per specim. in Peruviae prov. Cajamarca in valle Maranon ad Pion a Weberbauer (no. 7141) lectum constituta est; typum

in herb. Univ. Calif. (Los Angeles), isotypos in herb. Smithson., Kew. et Field Mus. vidi.

Frutex altitudine ad 1 m ramis viscido-villosis; foliorum laminis 4,5—7 cm longis, 2,5—4 cm latis, anguste ovatis, in apice obtusiusculis in basi subcordatis paginis ambobus glanduloso-villosis sordidis, margine irregulariter serrata, petiolis ad 5 cm longis elatis; floribus in spicas virgatas angustas demum 45 cm longas confertis, verticillastris bracteis ovatis caducis 5—10 mm longis subtentis, pedicellis 2—2,5 mm longis elatis; calycibus florentibus 9—10 mm longis, in maturitate 14—15 mm longis extus pilis extensis glandulosis cinereis; corollarum albidarum tubo 10 mm longo intus nudo, labia superiore 4,5—5 mm alta rosea inferiore 10 mm lata albida; staminibus inter tubi medium et fauces positis longissime exsertis. jugo 31—32 mm longo basim connexo, gubernaculo integro.

Peruvia: Cajamarca: in valle Marañon ad Pión. 1000 m.

18. Sect. **Hastatae.**

Salvia sect. *Calosphace* subsect. *Longiflorae Hastatae* Benth. in DC. Prodr. **12**, 348, 1848 per species plures constituta est; species typica est *S. sagittata.*

Herbae perennes in basi suffruticosae vel frutices foliis sat amplis interdum amplissimis nunc deltoideo-ovatis nunc deltoideis interdum sagittatis vel pulchre hastatis rarius cordatis; floribus in verticillastris solitariis oppositis in racemis viscidis saepius corymbose paniculatis frequenter speciosis dispositis; calycum labia superiore 5-venis truncato-rotundata obscure trimucronata extus viscide glandulosa; corollarum speciosarum caerulearum (rarius rosearum) tubo cylindrato flexuoso intus nudo, labia superiore erecta vix galeata, inferioris longioris lacinia media pro rata grande; staminibus ad tubi medium positis e labia superiore sat exsertis, jugo ad basim connexo, gubernaculo infra medium oblongo-dilato, stylo glabro, gynobasis cornu interdum subnullo. Plantae andinae praesertim equatorensi-peruvianae.

Corollarum tubi 3—5,5 mm longi; herbae
procumbentes . . . . 114. *S. palaefolia*
Corollarum tubi 10—20 mm longi
Plantae procumbentes subrepentes in nodis
inferioribus radicantes . . . . 113. *S. scutellarioides*
Plantae erectae in basi suffruticosae rarius
frutices
Folia maximam partem 4—6 cm interdum
9 cm longa pulchre deltoideo-sagittata
marginibus rectis rarius subhastata . 112. *S. rumicifolia*

Folia maximam partem 8—15 cm saepe 20 cm longa nunc deltoidea nunc hastata rarius cordata
- Folia subcoriacea bullulata pulchre hastata
  - Corollae atro-caeruleae . . . . 110. *S. sagittata*
  - Corollae roseae . . . . 111. *S. rhodostephana*
- Folia sat tenua nunc deltoidea nunc cordata vix hastata interdum late sagittata
  - Corollarum tubi 16—18 mm longi, labia inferiore 8—12 mm longa; staminum juga 25—26 mm longa . 108. *S. macrophylla*
  - Corollarum tubi 18—20 mm longi, labia inferiore 13—16 mm longa; staminum juga 35—40 mm longa . 109. *S. Funckii*

108. **S. macrophylla** Benth., Lab. Gen. et Sp. (Suppl.) 725, 1835 et in DC. Prodr. 12, 346, 1848 per specim. in Peruviae prov. Huanuco in valle Huanuco ad ripam fluminis a Matthews (no. 800) lectum constituta est; typum in herb. Kew., isotypum in herb. Univ. Calif. (Los Angeles) vidi.

Suffrutex altitudine 1—3 m caulibus superne glanduloso-villosis; foliorum laminis membranaceis maximis 10—20 cm longis, 8—15 cm latis, nunc deltoideis nunc cordatis, leniter acuminatis, ad basim nunc rotundatis nunc subhastatis etiam truncatis, margine nunc recta nunc convexa irregulariter crenata, pagina superiore hirsuta, inferiore ad venas piloso-villosis, petiolis glanduloso-villosis ad 15 cm longis supremis subnullis elatis; floribus solitariis in verticillastris bracteis obovatis caducis 6—7 mm longis glandulosis subtentis, glomerulis inter se 0,5 ad 2 cm distantibus in paniculis amplis viscidis dispositis; calycibus florentibus 6 mm longis, extus sordide glandulosis, in maturitate 10—12 mm longis, labia superiore subtridentata, inferioris laciniis acutis, pedicellis 6—7 mm longis elatis; corollarum tubo 16—18 mm longo intus nudo, labia superiore 6—7 mm alta, inferiore 8—10 mm longa; staminibus ad fauces positis, filamentis 2 mm longis, jugo 25—26 mm longo, gubernaculo 5—6 mm longo in basi dilato.

Colombia: in cordillera occ. 1800 m; Ecuador: inter Loja et Portovelo; prope Loja: inter El Tambo et La Loma, 1000 ad 2200 m; Peruvia: in valle Huanuco ad fluminis ripam, prope Abancay; in apricis prope Muna, 7000 ped.; ad ripam saxosam prope San Rafael, 8500 ped.; Apurimac: ad Puicus, in fruticetis ad rivulum.

109. **S. Funckii** Briq. in Ann. Conserv. et Jard. Bot. Genève 2, 174, 1898 per specim. in Venezuela in montibus prope San Sebastian ad Caracas a Funck (no. 280) lectum constituta est; typum in herb. Delessert., isotypum in herb. Mus. Par. vidi.

Frutex viscosissimus altitudine ad 4 m ramis viscido-villosis sordidis; foliorum laminis sat tenuibus 6—15 cm longis, 4—14 cm latis, maximam partem deltoideis, frequenter sagittatis, raro subcordatis, in apice subacutis, in basi truncato-cordatis, angulis subacutis rarius rotundatis, margine maximam partem subrecta. pannoso-dentata, paginis ambobus glanduloso-villosis, petiolis 5—10 cm longis viscido-villosis sat crassis elatis; floribus oppositis in racemis 3—5 cm longis viscidis instructis, inter se 8—10 mm distantibus, bracteis late ovatis juvencum dense imbricatis villosis 8—9 mm longis caducis subtentis; calycibus florentibus extus sordide glandulosis purpureo-viridibus 9—10 mm longis, labiis acuminatis, in maturitate paulo auctis, pedicellis 5—7 mm longis elatis; corollarum tubo 18—20 mm longo, labia superiore 9 ad 11 mm alta, inferiore 13—16 mm longa; staminibus ad fauces positis, filamentis 3 mm longis, jugo 35—40 mm longo, gubernaculo 8—9 mm longo in basi dilato.

Venezuela: Miranda: San Sebastian ad Caracas; Merida: in Tonjillo ad vias; Trujillo: prope La Puerta, 2000 m; Colombia: Santander: prope California ad marginem silvae, 2800 m; ad Rio Frio, 2300 m.

110. **S. sagittata** R. et P., Fl. peruv. 1, 23, t. 35, 1798 per specim. in Peruvia prope Tarma, Huarochiro et Huanuco a Ruiz et Pavon lecta constituta est; specim. certa in herb. Boiss. et Berolin. vidi.

Herba viscida altitudine 1—2,5 m in basi ramosa, caulibus superne glanduloso-villosis; foliorum laminis coriaceis 6—20 cm longis, 2,5—12 cm latis, pulchre hastatis, in apice acutis: margine irregulariter crenulata, paginis ambobus viridibus nisi inferiore cinerea sparse villosis, superiore bullato-rugosa, inferiore reticulato-venulosa, petiolis 2—8 cm longis elatis; floribus solitariis in verticillastris, bracteis ovatis 3—4 mm longis caducis subtentis, glomerulis inter se 0,5—1 cm distantibus, in paniculis amplis ramosioribus viscosis saepius subcorymbosis dispositis; calycibus florentibus extus sordide glandulosis 4,5—6 mm longis, in maturitate 8 mm longis, labiis 2—2,5 mm longis subaequilongis, superiore subtridentata, inferioris laciniis acutis, pedicellis 3—4 mm longis elatis; corollarum tubo 16—18 mm longo intus nudo, labia superiore 9—10 mm alta, inferiore 12 mm diametro: staminibus ad fauces positis, filamentis 2 mm longis, jugo 30—34 mm longo, gubernaculo 7 mm longo in basi dilato.

Peruvia: Lima: prope Matucana. 3000 m: in angustiis saxosis fluminis Chillon supra Obrajillo, 3100—3300 m; prope Viso in humidis; Junin: in dumetis prope Ocopa, 3300 m; ad marginem silvae prope Carpapata supra Huacapistana, 2700—3200 m; prope Tarma et Huanuco; ad marginem dumeti, prope Mito, 9000 ped.: in saepibus prope Oroya, 9000—10000 ped.

111. **S. rhodostephana** Epling nom nov. per specim. idem constituta est. — *S. hastaefolia* Epl. in Rep. Spec. Nov., Beiheft 85, 63, 1935 per specim. in Peruviae prov. Ayacucho prope Huanta a Killip et Smith (no. 23323) lectum constituta est; typum in herb. Univ. Calif. (Los Angeles) vidi (non Meyer, Comm. Pl. Afr. Austr. 233, 1837).

Herba perennis in basi suffruticosa ramis pilis extensis glandulosis viscidis; foliorum laminis 7—10 cm longis (et ultra?) pulchre hastatis. margine irregulariter eroso-dentata, pagina superiore bullulata sparse hirsuta inferiore pallidiore praesertim ad venas villosa, petiolis 3—5 cm longis elatis; floribus in racemis glandulosis caeruleis dispositis bracteis rotundato-ovatis caducis caeruleis glandulosis subtentis, pedicellis 2,5—3 mm longis elatis; calycibus florentibus atro-caeruleis extus viscido-villosis. 6—7 mm longis, in maturitate 9—12 mm longis labiis hiantibus 4—4,5 mm longis; corollarum rosearum tubo 15—18 mm longo intus nudo. labia superiore 15—18 mm alta, inferiore subaequilonga; staminum filamentis 3 mm longis, jugo 40 mm longo.

Peruvia: Ayacucho: in dumetis prope Huanta, 2800 m: in collibus supra Huanta, 9000—10000 ped.; prope Tambillo ad agrorum margines.

112. **S. rumicifolia** Kunth in Humboldt et Bonpland, Voy., Nov. Gen. et Sp. Pl. 2, 305, 1817 per specim. in Ecuador prope Quito in radicibus montis Javirac a Humboldt et Bonpland lectum constituta est; typum in herb. Mus. Berolin., isotypum in herb. Mus. Par. vidi.

Herba altitudine ad 1,5 m caulibus in basi ramosis superne pilis extensis incanis vestitis; foliorum laminis coriaceis saepius 5—6 cm longis (rarius 9 cm) 2,5—5 cm latis, pulchre sagittatis rarius hastatis in apice acutiusculis, margine fere recta irregulariter crenulata, pagina superiore bullato-rugosa hirtella viride inferiore incano-villosa, petiolis 1,5—3 cm longis elatis: floribus solitariis in verticillastris bracteis 2—3 mm longis ovatis deciduis subtentis. glomerulis inter se 0,5—1 cm distantibus in paniculis amplis viscosis saepe subcorymbosis dispositis: calycibus florentibus 5 mm longis extus sordide glandulosis, in maturitate 8—9 mm longis, labiis 3 mm altis, superiore subtridentata, inferioris laciniis acutis, pedicellis 4—5 mm longis elatis; corollarum

caerulearum interdum albarum tubo 17—20 mm longo intus nudo, labia superiore 6—8 mm alta, inferiore 8—9 mm diametro; staminibus ad fauces positis filamentis 2 mm longis, jugo 27 ad 34 mm longo, gubernaculo 6—7 mm longo.

Colombia: Narino: prope Pasto in silvis; Euador: in saepibus et arvis prope Riobamba: in arenosis prope Riobamba et Ambato: in altaplanitie Tacunga ad Cotopaxi, 7600—8000 ped.; inter Tambo de Chimborazo et Mocha. 9000—12000 ped.; ad San Antonio de Salumbamba et Calicali, 1800—2800 m; ad Hondonada de Guapulo in fruticetis, 2760 m; in apricis circa oppidum Quito; in locis siccis interandinis prope Riobamba; in campis sterilibus altaplanitie ad Cotocollao; in altaplanitie arida prope Ambato, 8500 ped.

113. **S. scutellarioides** Kunth in Humboldt et Bonpland, Voy., Nov. Gen. et Sp. Pl. 2, 303, 1817 per specim. in Ecuador prov. Pichincha prope Chillo ad Quito a Humboldt et Bonpland (no. 2231) lectum constituta est; typum in herb. Mus. Par. vidi. — *S. petiolaris* Kunth l. c. et 2. 304, 1817 per specim. in calidis „in ripa fluminis Magdalena“ (? in Ecuador prov. Pichincha prope Magdalena) a Humboldt et Bonpland (no. 2057) lectum constituta est; typum in herb. Mus. Par. vidi.

Herba procumbens vel laxa caulibus ad 50 cm longis in basi prostratis in nodis radicantibus internodiis pilis extensis sparse vestitis; foliorum laminis sat tenuibus 2,5—9 cm diametro, maximam partem deltoideis interdum cordatis, in apice obtusis in basi saepius truncato-subcordatis, margine maximam partem recta frequenter convexa, crenato-serrata, paginis ambobus sparse hirsutis, petiolis 2—10 cm longis elatis; floribus oppositis in bractearum glandulosarum 4—6 mm longarum caducarum axillis solitariis in racemis pulchris longe pedunculatis pilis extensis glandulosis vestitis dispositis, pedicellis 4—5 mm longis elatis: calycibus florentibus extus sordide glandulosis 4,5—6 mm longis, in maturitate 7—12 mm longis; corollarum tubo 10—16 mm longo intus nudo, labia superiore 6—8 mm alta, inferiore 8—12 mm longa; staminibus ad fauces positis filamentis 2,5—3 mm longis, jugo 18—33 mm longo, gubernaculo 5—8 mm longo in basi dilato.

Colombia: Antioquia: in graminosis prope Quebrada Arquina, 1700—2000 m; Caldas: in humidis prope Apia, 1600—1900 m; ad vias prope Rio Quindio juxta Armenia, 1300—1500 m; Tolima: ad La Trinidad, Libano, 1000—1200 m; El Valle: ad vias prope La Cumbre, 1600—1700 m; in valle Rio Calima ad Calima; Cundinamarca: Bogota; Cauca: in montibus Popayan, 1700—2500 m; in dumetis infra San Jose, San Antonio, 2300—2500 m; prope

Huila 1600—1900 m; Cuesta de Tocota inter Buenaventura et Cali, 1500—1900 m; Ecuador: in altaplanitie Quitensi; ad pagum Gonzanama: Las Maquinas, 6800 ped.; Tungurahua. 2000 m; El Magdalena. 2800 m; Ambato; Curatagua; Tungurahua; Banos, Tungurahua, 6500 ped.; in silva humida prope San Francisco ad Ambato, 8500 ped.; inter Malchingui et Pomasqui, Pichincha, 3000—3600 m; Las Juntas; Loja; Huigra; Peruvia: Huanuco: ad marginem dumetorum apricorum, prope Chagela. 9000 ped.; Cuzco: Ollantaytambo. 3000 m; Ayacucho: ad Pampolca inter Huanta et Rio Apurimac, 3200 m, in collibus apertis.

114. **S. palaefolia** Kunth in Humboldt et Bonpland, Voy., Nov. Gen. et Sp. Pl. **2**, 303, t. 157, 1817 per specim. in Colombiae prov. Cauca inter Popayan et pagum Palace a Humboldt et Bonpland lectum constituta est; typum in herb. Mus. Par. vidi.

Herba procumbens caulibus ad 50 cm longis in basi prostratis in nodis radicantibus pilis extensis vestitis: foliorum laminis maximam partem deltoideo-cordatis palaeformibus interdum subrotundis 2,5—6 cm diametro in apice rotundatis. marginibus crenatis convexioribus rarius subrectis vel leniter concavis, paginis ambobus plus minusve hirsutis, petiolis ad 4 cm longis elatis: floribus oppositis in bractearum caducarum viscidarum 1,5—2 mm longorum axillis solitariis, in paniculis viscidis nunc congestis nunc diffusis dispositis; calycibus florentibus 3—3,5 mm longis extus viscido-hirtellis, in maturitate 5—6 mm longis, labia superiore rotundata obscure trimucronata, inferioris laciniis acutis, pedicellis 2—3 mm longis elatis; corollarum tubo 3—5,5 mm longo. labia superiore 2 mm alta. inferiore 4,5 mm diametro; staminibus paulo supra tubi medium positis, filamentis 1 mm longis, jugo arcuato 2,5—3,5 mm longo, gubernaculo saepius incurvo vix 1 mm longo.

Venezuela: Merida: supra Chachopo ad radices murorum; prope Timaotes ad vias et in agris, 2000 m; Colombia: Norte de Santander: inter Mutiscua et Pamplona, 2700—3400 m; Santander: in valle Rio Surata. 2000—2300 m; La Baja. 2200—2600 m; Cundinamarca: ad Chapinero prope Bogota; inter El Charquita et Tequedama, prope Bogota; Caldas: in silvis prope Pinares supra Salento, 2600—2900 m; Huila: in silvis prope Neiva, 2000—2500 m; Cauca: in humidis ad rivulum prope San Isidro, Purace; Huila. 1600—1900 m.

19. Sect. Standleyana.

Herbae perennes foliis deltoideo-hastatis; floribus oppositis in bractearum parvarum perstatarum axillis solitariis in racemis viscidis paniculatis dispositis; calycum labia superiore imprimis

3-venis tamen 2—4 debilibus justum numerum superantibus, saepius trimucronata; corollarum pulchre cyanearum tubo intus nudo flexuoso superne gradatim ampliato nullomodo invaginato quam labiae duplo longiore; labiis subaequilongis; staminibus infra tubi medium positis e galea 8—10 mm exsertis; styli glabri ramo postico nullo. Species mexicana una: *S. cacaliaefolia*.

This species is of some interest as exhibiting some characteristics of both subsections *Hastatae*, Andean, and *Blakea* which is Mexican or Central American. In the persistent bracts and entire style it is similar to the latter. In structure of corolla and calyx it is more like the former, but it is singular in the small middle lobe of the lower lip.

115. **S. cacaliaefolia** Benth. in DC. Prodr. **12**, 348, 1848 per specim. in Mexico prov. Chiapas in pinetis prope Pueblo Nuevo a Linden (no. 132) lectum constituta est; typum in herb. Kew., isotypum in herb. Delessert. vidi. — *S. atriplicifolia* Fern. in Proc. Am. Acad. **35**, 553, 1900 per specim. in Mexico prov. Chiapas a Ghiesbreght (no. 759) lectum constituta est; typum in herb. Gray., isotypum in herb. Kew. vidi. — *S. Hempsteadiana* Blake in Proc. Biol. Soc. Wash. **32**, 187, 1919 per specim. e seminibus guatemalensibus a Popenoe lectis eductum constituta est; typum in herb. Smithson. vidi.

Herba perennis altitudine ad 1 m caulibus superne glanduloso-pilosis; foliorum laminis 5—10 cm longis, saepius deltoideo-hastatis, subcoriaceis, angulis acutis etiam acuminatis, paginiis ambobus glabris vel sparse hirsutis, marginibus subintegris, petiolis 2—8 cm longis elatis; floribus in racemis viscidis paniculatis 15—25 cm longis dispositis; calycibus florentibus 4—6 mm longis sparse glandulosis; corollarum tubo 18—20 mm longo, labia superiore 4—8 mm alta; staminibus e galea 8—10 mm exsertis.

Mexico: Chiapas: in pinetis prope Pueblo Nuevo; Guatemala: Alta Verapaz: in summis inter Coban et Tactic.

20. Sect. **Blakea.**

Herbae perennes insignes vel radicibus fusiformibus vel stoloniferae foliis vel hastatis vel deltoideo-sagittatis interdum palaeformibus rarius stellaeformibus petiolis saepius elongatis elatis; floribus oppositis in racemis viscidis saepe ternato-paniculatis dispositis bracteis perstatis (*S. costaricensis* deciduis) subtentis; calycum labia superiore paulo longiore saepius trimucronata imprimis 3-venis, tamen 2—4 venis debilibus justum numerum superantibus; corollarum cyanearum tubis amplis in basi invaginatis (*S. costaricensis* lenissime) intus nudis, labia superiore cymbiforme tubum saepius superante (*S. mendacis* subaequilonga),

inferiore longiore patente, lacinia media latissima; staminibus in galea inclusis (*S. vitifoliae* interdum e galea exsertis), supra tubi medium ad fauces positis, gubernaculo dilato pro rata brevissimo; styli glabri ramo postico brevissimo interdum nullo. Plantae Mexicanae. Species typica est *S. patens*.

Salvia mendax has the corollas, but smaller, of *S. patens* and the foliage and habit of *S. vitifolia*. Its calyces however are more like those of *S. costaricensis* but larger, while those of *S. vitifolia* are similar to those of *S. patens* but smaller. In its proportionately short tube the corolla of *S. vitifolia* is similar to that of *S. costaricensis*. A specimen collected by Nelson (no. 1361 a) 18 miles southwest of Oaxaca is of uncertain disposition. Its leaves are very broad and deltoid-sagittate. Its flowers, including the calyx, are more nearly those of *S. patens* but smaller, although hardly coming within the range of *S. mendax*. Its bracts are similar to those of that species or of *S. vitifolia*. A similar anomalous form with only the uppermost leaves was collected by Langlassé (no. 1044) in either Michoacan or Guerrero.

Bracteae deciduae corollarum tubi 4,5—5 mm longi . . . . 116. *S. costaricensis*
Bracteae perstatae; corollarum tubi 8 ad 24 mm longi
  Folia plerumque hastata; corollarum labia superior 23—24 mm longa . . . . . 119. *S. patens*
  Folia plerumque deltoideo-sagittata vel oblongo-ovata; corollarum labia superior 11—22 mm longa
    Corollarum tubi 16—19 mm longi . . . 118. *S. mendax*
    Corollarum tubi 8—12 mm longi
      Folia subtus villosa petiolis 3—10 cm longis elata . . . . 117. *S. vitifolia*
      Folia subtus glabra petidis 2—3 mm longis elata . . . . 119a. *S. subpatens*

116. S. **costariensis** Oersted in Kjoeb. Vidensk. Meddel. 39, 1853 per specimen in Costa Rica in monte Jaris a Oersted (no. 17) lectum constituta est; typum in herb. Mus. Haun., isotypum in herb. Kew vidi.

Herba procumbens etiam radicans stolonifera rarius erecta caulibus tenuibus sparsissime villosis superne inter flores pilis extensis brevibus glandulosis et longioribus glandulosis vestitis; foliorum laminis plerumque deltoideo-sagittatis rarius hastatis vel palaeformibus 3—10 cm longis, petiolis 2—12 cm longis elatis, marginibus irregulariter crenato-serratis, paginis ambobus plus minusve villosis saepe glabratis racemis viscidis

pedunculatis 5—20 cm longis simplicibus vel ternato-paniculatis. bracteis deciduis; calycibus florentibus extus pilis extensis glandulosis viscidis 4 mm longis in maturitate 8—9 mm longis, labiis circiter 2,5 mm longis; corollarum tubo 4,5—5 mm longo, labia superiore 5,5—8,5 mm alta.

Costa Rica: Cartago; Las Vueltas; Turrialba; San Jose.

117. S. **vitifolia** Benth., Lab. Gen. et Sp. Suppl. 724, 1835 et in DC. Prodr. 12, 348, 1848 per specimen in Mexico prov. Oaxaca in Sierra de San Felipe a Andrieux (no. 146) lectum constituta est: typum in herb. DC. vidi. — *S. proxima* Mart. et Gal. in Bull. Acad. Brux. 11, II, 62, 1844 per specimen in Mexico prov. Oaxaca in Sierra de San Felipe a Galeotti (no. 651) lectum constituta est; typum in herb. Mus. Brux., isotypum in herb. Kew. vidi.

Herba perennis altitudine ad 60 cm radicibus fusiformibus caulibus pilosis superne glanduloso-villosis; foliorum laminis plerumque 5—10 cm longis saepius deltoideo-sagittatis, petiolis villosis 3—10 cm longis elatis, marginibus irregulariter sinuatis et crenatis, paginis ambobus pilis crassis plus minusve villosis. inferiore interdum incana; racemis viscidis saepe paniculatis. glomerulis inter se 1—2 cm distantibus bracteis perstatis lanceolatis subtentis; calycibus florentibus extus viscido-pilosis 6—9 mm longis in maturitate paulo auctis. labiis 5—7 mm longis acutis: corollarum tubo 8—10 mm longo, labia superiore 11—16 mm longa.

Mexico: Oaxaca: Cerro San Felipe; Cerro Verde; inter Miahuatlan et S. Andres; Lachopa; La Parada; Vera Cruz: Coscomatepec; Maltrata; Orizaba; Puebla: Cerro Gavilan.

118. S. **mendax** Epling sp. nov. per specim. in Guatemala in quercetis prope Chichavac in ditione Chimaltenango a Skutch lectum constituta est; typum in herb. Smithson. vidi.

Herba perennis altitudine 40—60 cm radicibus fusiformibus; caulibus pilosis praesertim inter flores plus minusve glandulosis; foliorum laminis plerumque deltoideo-sagittatis 4—10 cm longis petiolis pilosis 2—6 cm longis elatis, marginibus irregulariter sinuatis et crenatis, paginis ambobus hirsuto-villosis; racemis simplicibus vel ternato-paniculatis viscidis 10—20 cm longis. bracteis lanceolatis perstatis subtentis: calycibus florentibus 7—10 mm longis viscido-pilosis, in maturitate 12—15 mm longis, labiis 7—8 mm longis; corollarum tubo 16—19 mm longo labia superiore 15—18 mm alta.

Mexico: Chiapas: San Cristobal; Teopisca; Guatemala: inter Cubulco et Toyabaj; Chichavac (Chimaltenango); Laguna Ayaric.

119. **S. patens** Cav., Icones 5, 33, t. 454, 1799 per specim. in Mexico in umbrosis prope Real del Monte lectum constituta est; typum olim in herb. Neé, non vidi. — *S. grandiflora* Nee ex Cav., loc. cit., 1799. — *S. spectabilis* Kunth in Humboldt et Bonpland, Voy.. Nov. Gen. et Sp. Pl. 2, 304, 1817 per specim. in Mexico prope Santa Rosa a Humboldt et Bonpland lectum constituta est; typum in herb. Mus. Par. vidi. — *S. decipiens* M. et G. in Bull. Acad. Brux. 11, II, 64, 1844 per specim. in Mexico prov. Hidalgo in silvis Moran prope Real del Monte a Galeotti (no. 688) lectum constituta est; typum in herb. Mus. Brux. vidi. — *S. staminea* M. et G., op. cit.. 65, 1844 per specim. in loco eodem a Galeotti (no. 687) lectum constituta est; typum in herb Mus. Brux., isotypum in herb. Delessert. vidi. — *S. grandiflora* Sessé et Moc.. Fl. Mex. ed. 2. 5. 1894: specimen ex herb. horti Matrit. vidi.

Herba perennis spectabilis altitudine ad 1 m. radicibus fusiformibus caulibus pilis extensis 1—2 mm longis glandulosis viscidis; foliorum valde variorum laminis 6—20 cm longis maximam partem hastatis, frequenter deltoideo-hastatis interdum palaeformibus rarius quinquangulatis. petiolis 2—10 cm longis glandulosis elatis, supremis sessilibus saepius ovatis, marginibus irregulariter crenato-serratis. pagina superiore sparse hirsuta, inferiore cinereo-villosa; floribus in bractearum perstatarum linearum axillis oppositis saepius in paniculis viscidis 20—40 cm longis dispositis; calycibus florentibus extus glanduloso-pilosis 12—20 mm longis; corollarum tubo amplo 17—24 mm longo. labia superiore 23—34 mm alta.

Mexico: San Luis Potosi: San Miguelito, Sierra de Alvarez; Hidalgo: Real del Monte: Mineral del Monte; El Chico; Moran; Mexico: Tultenango canyon; Michoacan: Tlalpujahua.

119a. **S. subpatens** Epling sp. nov. per specim. in Mexico prov. Temascaltepec prope Tejupilco a Hinton (no. 4376) lectum constituta est; typum in herb. Univ. Calif. (Los Angeles). isotypum in herb. Kew. vidi.

Herba perennis radicibus fusiformibus caulibus paucis erectis altitudine ad 1 m utrimque pilis extensis glandulosis 1 mm longis villosis: foliorum laminis oblongo-ovatis 8—12 cm longis in apice acuminatis in basi modo rotundatis modo truncato-subcordatis rarius obscure hastatis caulem subamplectentibus subsessilibus petiolis 2—3 mm longis elatis, marginibus irregulariter serrato-dentatis paginis ambobus glabris inferiore pallida; floribus in bractearum perstatarum subulatarum axillis oppositis in racemis viscidis 10—20 cm longis dispositis; calycibus florentibus 10 mm longis extus pilis extensis glandulosis; corollarum tubo amplo 11—12 mm longo, labia superiore 18—22 mm alta.

Mexico: Mexico: Temascaltepec: prope Tejupilco in quercetis, 1340 m.

21. Sect. **Wrightiana**

Suffrutices frutices vel arbores parvae foliis modo parvis ovatis modo majoribus elliptico-lanceolatis; floribus 6 et ultra in verticillastris bracteis caducis subtentis in spicis cylindratis densis longe pedunculatis confertis; calycum labia superiore 3-venis quam inferior longior; corollarum albarum vel caerulearum tubo cylindrato intus nudo, labia inferiore quam superior longiore; staminibus ad fauces positis e galea longe exsertis; styli glabri ramo superiore brevissimo subnullo. Plantae cubenses etiam haitenses. *S. strobilanthoides* est species typica.

Folia ovata 2,5—6 cm longa: corollae caeruleae; suffrutices . . . . 122. *S. densiflora*
Folia elliptico-lanceolata 6—20 cm longa utrimque angustata; corollae albidae; frutices vel arbusculae
  Calyces maturi pedicellis 3—4 mm longis elati; folia plerumque 10 ad 20 cm longa . . . . 121. *S. strobilanthoides*
  Calyces maturi pedicellis 7—10 mm longis elati; folia plerumque 5 ad 10 cm longa . . . . 120. *S. arborescens*

120. **S. arborescens** Urb. et Ekm. in Arkiv. Bot. 20, A., no. 15, 91, 1926 per specim. in Haiti in Massif des Cabos prope Petite Riviere de l'Arbonite ad Perodin a Ekman (no. 3476) lectum constituta est: typum in herb. Mus. Stockh. et isotypum in herb. Berol. vidi. — *S. arborescens* var. *dolichocarpa* Urb. et Ekm. in Arkiv. Bot. 22 A. no. 10, 48, 1929 per specim. in Haiti, Massif de la Selle, Croix-des Bouquets, Badeau a Ekman (no. 7857) lectum constituta est; typum in herb. Mus. Stockh. vidi.

Arbuscula altitudine ad 6 m trunco ad 10 cm diametro, ramulis minute appresso-hirtellis fere glabris; foliorum laminis elliptico-lanceolatis vel ovato-lanceolatis 6—9 cm longis, 1,5 ad 3,5 cm latis, utrimque saepius acuminatis, petiolis 5—10 mm longis elatis, pagina superiore atro-viride glabra, inferiore cinerea minute et dense puberula; floribus 6 et ultra in verticillastris bracteis deciduis subtentis in spicas densas longe pedunculatas 12—20 cm longas confertis, glomerulis infimis interdum 1—2 cm remotis; calycibus maturis extus hirtellis fere glabris 9—10 mm longis, pedicellis 7—10 mm longis elatis; corollarum albarum tubo ut videtur circiter 8—9 mm longo.

Haiti: Massif de la Selle; Massif des Cabos.

121. **S. strobilanthoides** Wr. ex Griseb., Cat. Pl. Cub. 214, 1866 per specim. in Cuba prope Monteverde ad scopulorum radices a Wright (no. 3156) lectum constituta est; typum olim in herb. Griseb. hodie in herb. Univ. Goett., isotypos in herb. Gray. et Kew. vidi.

Frutex altitudine 1—3 m ramulis cinereo-puberulis; foliorum laminis lanceolatis 10—15 cm longis, 2,5—5 cm latis, supra medium acuminatis in apice acutissimis, in basi ad petiolos 4—8 cm longos angustatis, marginibus remote minute serrulatis, pagina superiore minutissime puberula fere glabra, inferiore cinereo-puberula; floribus 6 et ultra in bractearum rotundato-caudatarum glabrarum ciliatarum deciduarum axillis dispositis in spicas cylindratas longe pedunculatas 6—10 cm longas confertis; calycibus florentibus ad margines ciliolatis caeterum glabris 7—8 mm longis, pedicellis 3—4 mm longis elatis; corollarum albarum tubo 8 mm longo cylindrato, labia superiore 4,5 mm alta.

Cuba: Monteverde.

122. **S. densiflora** Benth., Lab. Gen. et Sp. 721, 1835 et in DC. Prodr. 12, 309, 1848 per specim. in insula Santo Domingo a Bosc lectum constituta est; typum in herb. Kew. vidi. — *S. Wunschmanni* Krug et Urb. in Urb., Symb. Antill. 1, 397, 1900 per specim. in Haiti prope Petionville a Picarda (no. 626, 937, 1172) lecta constituta est; specimina in herb. Mus. Berolin. vidi. — *S. Constanzae* Urb., Symb. Antill. 7, 360, 1912 per specim. in Santo Domingo prope Constanza a Tuerckheim (no. 2929) lectum constituta est; typum in herb. Mus. Berolin. vidi. — *S. azuensis* Urb. in Rep. Spec. Nov. 13, 475, 1915 per specim. in Santo Domingo prov. de Azua ad Los Vallecitos a Fuertes (no. 1870) lectum constituta est; typum in herb. Mus. Berolin., isotypum in herb. horti bot. Nov. Eborac. vidi.

Suffrutex altitudine ad 1,5 m, ramulis pubescentibus; foliorum laminis ovatis 2,5—6 cm longis, in apice acutiusculis interdum obtusis, in basi saepius rotundatis rarius subtruncatis, petiolis 8—30 mm longis elatis, marginibus crenato-serratis, pagina superiore leniter bullata in bullis plus minusve pubescente areolas formante maximam partem cinerea, inferiore pallidiore interdum albida pilis quam superioris densioribus mollissime pubescente; floribus circiter 12 in verticillastris bracteis deciduis subtentis pedicellis 1,5 mm longis elatis in spicas densas cylindratas 4—10 cm longas dense confertis; calycibus florentibus extus pubescentibus ut videtur in maturitate plus minusve denudatis 5—6,5 mm longis; corollarum caerulearum tubo 4—5 mm longo, labia superiore 1,5—2 mm longa, inferiore duplo triplove longiore.

Haiti: Petionville, Massif de la Selle; Santo Domingo: Constanza; Los Vallecitos; Valle del Yaqua; Sierra de Ocoa.

22. Sect. **Gardoquiflorae.**

Suffrutices pulchri argentei ramulis dense albo-tomentellis cretatis; foliorum laminis sat amplis ovato-lanceolatis vel oblongis rarius ovatis breviter petiolatis; utrimque pilis minutissimis argenteo-tomentellis velutinis; floribus 6 et ultra in verticillastris bracteis caducis vel (*S. Buchii*) tarde deciduis subtentis in spicas compactas cylindratas vel laxiores paniculatas specioso-purpureas dispositis; calycum subfoliosorum labia superiore 3-venis quam inferior longiore; corollarum generis insignium habitu *Gardoquiae* tubo tubiforme leniter arcuato intus nudo, labia superiore brevissima plana inferiore longiore ut videtur patente; staminibus omnino inclusis ad tubi medium positis; styli modo glabri modo pubescentis ramo postico subnullo. Plantae haitenses. Species typica est *S. brachyloba*.

Spicae compactae cylindratae lanatae bracteis rotundato-caudatis perstatis vel tarde deciduis ornatae . . . . 123. *S. Buchii*

Spicae appresso-hirtellae bracteis caducis ornatae

 Spicae compactae; calyces florentes 7 mm longi . . . . 124. *S. brachyloba*

 Spicae laxiores paniculatae; calyces florentes 4 mm longi . . . . 125. *S. selleana*

123. **S. Buchii** Urb., Symb. Antill. 3. 369. 1903 per specim. in Haiti prope Gonaives in Morne Bellance in fruticetis humidis a Buch (no. 658); typum in herb. Mus. Berolin. vidi.

Suffrutex altitudine ad 2 m ramulis dense albo-tomentellis; foliorum laminis plerumque 6—9 cm longis ovato-lanceolatis, in apice acutis et plus minusve acuminatis, in basi ad petiolos 0,5 ad 2 cm longos rotundato-angustatis; marginibus serrulatis, paginis ambobus pilis minutissimis cinereis vel albidis velutinis; floribus 6 et ultra in verticillastris bracteis perstatis conspicuis vel tarde deciduis subtentis in spicas compactas lanatas purpureas 8—20 cm longas congestis; calycibus florentibus extus lanatis 8—8,5 mm longis; corollarum albidarum tubo 8—8,5 mm longo.

Haiti: Massif du Nord: Morne Bellance.

124. **S. brachyloba** Urb., Symb. Antill. 7, 362, 1912 per specimen in Santo Domingo prope Constanza in montibus apricis a Tuerckheim (no. 3000) lectum constituta est; typum in herb. Mus. Berolin., isotypum in herb. horti bot. nov. Eborac. vidi.

Suffrutex incanus altitudine 1,5 m ramulis densissime cretatis; foliorum laminis modo oblongo-ovatis modo elliptico-lanceolatis 5—8 cm longis, in apice acutis frequenter acuminatis, in basi ad petiolos 5—10 mm longos rotundato-angustatis, marginibus crenato-serrulatis, paginis ambobus pilis minutissimis vestitis argenteis velutinis, superiore interdum cinerea subglabra; floribus 6 et ultra in verticillastris bractcis caducis subtentis in spicis compactis rubro-violaceis vel caeruleo-violaceis 8—15 cm longis dispositis: calycibus florentibus appresso-hirtellis 7 mm longis; corollarum caerulearum tubo 7,5 mm longo.

Haiti: Massif de la Selle: Nouvelle Touraine, Petionville; Massif des Matheux: Morne Delpech: Santo Domingo: Constanza.

125. **S. selleana** Urb. in Rep. Spec. Nov. 13, 476, 1915 per specimen in Haiti in Morne la Selle in silvis apricis a Buch (no. 1145) lectum constituta est; typum in herb. Mus. Berol. vidi.

Suffrutex altitudine 1,5 m ramulis densissime et minutissime cretatis: foliorum laminis ovatis vel oblongis, 3—6 cm longis, in apice obtusiusculis, in basi ad petiolos 5—10 mm longos angustatis marginibus crenato-serrulatis subintegris, paginis ambobus pilis minutissimis densis albidis argenteis, velutinis; floribus 6 et ultra in verticillastris bracteis caducis subtentis in spicis pulchre caeruleis laxis paniculatis 5—10 cm longis dispositis; calycibus florentibus extus appresso-hirtellis 4 mm longis; corollarum caerulearum tubo 4—5 mm longo.

Haiti: Massif de la Selle: Morne de la Selle.

23. Sect. Bracteata.

Herbae annuae inamoenae glandulosae foliis amplis deltoideo-cordatis petiolis frequenter subaequilongis elatis; floribus saepius tribus in verticillastris bracteis ovatis herbaceis perstatis rarius tarde deciduis subtentis in spicis interruptis elongatis dispositis; calycum labiis subaequilongis superiore rotundata 5-venis: corollarum caerulearum tubo 7,5—8,5 mm longo, intus ad medium rugis binis obliquis parvis ornato, labia inferiore quam superior duplo longiore patente, lacinia media latissima; staminibus in galea inclusis, gubernaculo in dentem retrorsum ad medium producto; styli postice hirtelli ramo postico longiore, antico latissimo multo breviore concavo-ampliato truncato. Species una mexicanorum: *S. herbacea*.

126. **S. herbacea** Benth., Lab. Gen. et Sp. 720, 1835 et in DC. Prodr. 12, 311, 1848 per specim. in Mexico prov. Oaxaca ad Tehuantepec a Andrieux (no. 450) lectum constituta est; typum in herb. Delessert. vidi.

Herba annua inamoena altitudine ad 1 m pilis extensis viscidis; foliorum laminis 3,5—8 cm longis, deltoideo-ovatis, acutis, in basi truncato-subcordatis, petiolis glandulosis 3—7 cm longis elatis, marginibus crenatis, paginis ambobus sparse glanduloso-pubescentibus inferiore pallidiore; floribus tribus in verticillastris, glomerulis demum inter se 1—3 cm distantibus, in spicis 15—40 cm longis dispositis; calycibus florentibus 8—12 mm longis, extus glandulosis et ad basim pilis longioribus pilosis, in maturitate auctis; corollarum caerulearum tubo 7,5—8,5 mm longo, labia superiore 6—7 mm alta, inferiore 12—13 mm longa.

Mexico: Oaxaca: inter La Venta et Miltepec, 60 m; Tehuantepec; Chiapas: Hacienda Montserrate.

24. Sect. **Glareosae.**

Herbae annuae erectae ramis saepius cymoso-dichotomis hirtellis rarius pilis extensis longioribus sparse vestitis; foliorum laminis maximam partem elliptico-oblongis et in basi angustatis; floribus 1—3 in verticillastris bracteis nunc perstatis nunc deciduis subtentis, glomerulis in spicis interruptis dispositis; calycum labiis superioribus 5-venis; corollarum tubi subcylindratis intus nudis, interdum papillis minutis intus ornatis, labia superiore interdum subfalcata; staminum in galea inclusorum jugis ad medium connexis, gubernaculo oblongo in dentem retrorsum vel extensum dilato; stylis glabris vel ad apices sparse hispidulis, ramo antico obtuso in duobus speciebus quam superior longiore et plano-dilato; gynobasis cornu ovula subaequante. Species typica est *S. hirsuta*. Herbae in America septentrionali late disseminatae sunt.

Bracteae caducae; folia 1,5—3 cm lata . . . . 130. *S. potus*
Bracteae perstatae vel tarde deciduae; folia 3 ad 20 mm lata
  Bracteae maximam partem 8—12 mm longae flores circumdantes; styli ramus anticus plano-dilatatus . . . . 129. *S. hirsuta*
  Bracteae maximam partem 2—6 mm longae
    Styli ramus anticus plano-dilatus; corollarum labia superior 4—5,5 mm alta . . . . . . 128. *S. emaciata*
    Styli ramus anticus obtusus; corollarum labia superior 2,5—3 mm alta . . . . 127. *S. reflexa*

127. **S. reflexa** Hornem., Enum. Pl. Hort. Hafn. 1, 34, 1807 per specim. hortatum constituta est; icon vidi. — *S. lanceolata* Brouss., App. Elench. Pl. Hort. Monsp. 15, 1805 per specim. hortatum constituta est (non Lamarck, Illustr. 1, 72, 1791): typum non vidi. — *S. lanceaefolia* Poir., Encycl. Suppl. 5, 49, 1817 per

specim. hortatum e seminibus „peruvianis" constituta est: typum non reperire potui. — *S. aspidophylla* Roem. et Schult., Syst., Mant. 1. 206, 1822 per specim. hortatum constituta est: typum non vidi. — *S. trichostemoides* Pursh, Fl. Am. Sept. 1. 19. 1814 per specim. in America sept. in planitie fluminis Missouri ad Big Bend a Lewis et Clark lectum constituta est: typum in herb. Acad. Sci. Phil. vidi.

Herba annua erecta ramosa, altitudine ad 60 cm ramis dichotomis ascendentibus retrorse hirtellis, internodiis 3—8 cm longis; foliorum laminis 3—5 cm longis, 3—12 mm latis, oblongis, etiam linearibus, obtusis, in basi ad petiolos hirtellos 0,5—1,5 cm longos angustatis, margine remote serrata, subintegra, pagina superiore glabra inferiore maximam partem pilis crispulis cinereo-hirtella; floribus saepius solitariis rarius 2—3 in verticillastris bracteis 2—3 mm longis lanceolatis hirtellis tarde deciduis subtentis, glomerulis inter se 1—2 cm distantibus; calycibus florentibus 4—6,5 mm longis, extus ad venas hirtellis, in maturitate plerumque 7—8 mm longis interdum 6 mm, rarius 9 mm longis hiantibus, pedicellis 2—3 mm longis elatis; corollarum tubo 4—4,5 mm longo, intus nudo vel frequenter papillis minutis binis ornato, labia superiore 2,5—3 mm alta, erecta, inferiore subrotunda, 4,5—5 mm diametro; styli ramo postico attenuato quam anticus obtusus multo longiore.

Illinois: Jo Daviess, Cook; Wisconsin: Buffalo: Missouri: Jackson, St. Louis; Kansas: Miami, Barton, Gray, Seward, Stanton, Logan: Iowa: Story, Johnson, Pottawattamie; Nebraska: Cass, Douglas, Buffalo. Dawes; North Dakota; Foster; South Dakota: Pennington, Stanley; Wyoming: Goshon; Colorado: Larimer, Boulder, Denver, Jefferson, El Paso, Fremont, Las Animas, Delta, Montrose, Grannison, Chaffee; Utah: Washington; New Mexico: Rio Arriba, Mora, San Miguel, Santa Fe, Valencia. McKinley, Lincoln. Chaves, Grant, Sierra, Otero; Arizona: Coconino, Gila, Pinal, Cochise; Texas: Randall, Parmer. Taylor, Concho, Howard, Hays, Comal, Bexar, Kerr, Refugio, Pecos, Presidio, Brewster; Mexico: Chihuahua: Chihuahua; Durango: Inde; Cienequita ad Durango; Coahuila: Saltillo; Parras; Zacatecas: Real de Pinos; San Luis Potosi: Angostura; Estacion de Catorce; San Luis Potosi; Queretaro: Queretaro; Aguascalientes: Aguascalientes; Hidalgo: Pachuca; Puebla: Tehuacan; San Luis Tultitlanapa; Michoacan: Morelia; Tzuitzuntzan.

128. **S. emaciata** Epl. in Jones, Contrib. West. Bot. no. 18, p. 52, 1933 per specim. in Mexico prov. Chihuahua ad Pilares in humidis a Hartmann (no. 744) lectum constituta est; typum

in herb. Univ. Calif. (Berkeley), isotypos in herb. horti bot. nov. Eborac., Gray. et Kew. vidi.

Herbae annuae erectae graciles emaciatae altitudine ad 35 cm utrimque fere glabrae lenissime hirtellae, ramis stricte erecto-ascendentibus, internodiis 3—6 cm longi; foliorum laminis oblongis etiam linearibus 2—3 cm longis, 4—8 mm latis, in apice obtusis, in basi ad petiolos 5—10 mm longos angustatis, subintegris: floribus saepius solitariis rarius binis in verticillastris bracteis perstatis elliptico-lanceolatis 3—6 mm longis ad margines sparse hispido-ciliatis subtentis, glomerulis inter se 1,5—3 cm distantibus; calycibus florentibus 8—9 mm longis in maturitate paulo auctis, 9—11 mm longis, extus praesertim ad venas hispidulis enim vero sparse hispidis: corollarum tubo 5—5,5 mm longo, labia superiore subfalcata 4—5,5 mm alta, inferiore 6—7 mm longa, lacinia media obcordata; styli ramo antico quam posticus patentim longiore et dilato.

Mexico: Chihuahua: Sierra Gazachic ad Minaca, 2200 ad 2300 m, in glareosis ad ripas; inter Colonia Garcia et Pratts Ranch; Cosiquiriachi; Pilares; Soldier Canyon (Sierra Madre Mts., 6500 ft.); Colonia Juarez, 5200 ft.; inter Rio Chico et Rio Caballo (Nor. O. de Mex.); Durango: inter Cerro Prieto et La Providencia: Guanajuato: Promenade de la Presa de la Olla.

129. **S. hirsuta** Jacq., Hort. Schoenbr. 3, 1, t. 252. 1798 per specim. hort. constituta est. — *S. phlomoides* Cav., Icon. 4. 10, t. 320, 1797 per specim. hort. constituta est (non Asso, Oryctog. Arag. 1784). — *S. ciliata* Poir., Encycl. 6, 588, 1804 per specim. hort. constituta est. — *S. bracteata* Poir., Encycl. 6, 622, 1804 per specim. hort. constituta est. — *S. sideritidis* Vahl, Enum. 1, 250, 1805 per specim. hort. constituta est. — *S. cryptanthos* Schult., Obs. Bot. 12, 1809 per specim. hort. constituta est. — *S. nepetifolia* Poir., Encycl., Suppl. 5, 48. 1817 per specim. hort. constituta est.

Herbae annuae erectae ramosae altitudine ad 40 cm ramis ascendentibus, inferne cinereo-pubescentibus et superne pilis extensis vestitis, internodiis 2—6 cm longis: foliorum laminis 2,5—4,5 cm longis, 12—18 mm latis, plerumque elliptico-oblongis in apice obtusis, in basi rotundatis et ad petiolos 0,5—1,5 cm longos angustatis, marginibus subserratis, paginis ambobus sparse cinereo-pilosis, subhirsutis; floribus maximam partem tribus in verticillastris bracteis herbaceis tarde deciduis rotundato-deltoideis abrupte acuminatis 8—12 mm longis sparse pilosis valde ciliatis subtentis, glomerulis inter se 1—3 cm distantibus: calycibus florentibus 6—7 mm longis, extus hirsuto-pilosis, in maturitate 10—13 mm longis; corollarum tubo 5 mm

longo. labia superiore 5—6 mm alta, inferiore 7—8 mm longa, lacinia media 6 mm lata obcordata; styli ramo antico quam posticus longiore plano-dilato.

Mexico: Durango: Carpintero, 2000—2100 m; Santiago Papasquiaro; Tejamen; Zacatecas; San Luis Potosi; Guanajuato; Queretaro: San Juan del Rio; Hidalgo: Tequixquiac; Pachuca; Puebla: Ixtaccihuatl; Distr. Fed.: Santa Fe; Mixcoac; Roma; Olivar; Contreras; Michoacan: Punguato pr. Morelia; Oaxaca: Ixtepec.

130. **S. potus** Epling nom. nov. — *S. Chia* Fernald in Proc. Am. Acad. 35, 503. 1900 per specim. in Mexico prov. Coahuila prope Saltillo in vallibus udis a Palmer (no. 334) lectum constituta est; typum in herb. Gray., isotypes in herb. Kew., Smithson. et Univ. Calif. (Berkeley) vidi (non Sessé et Moc., La Naturaleza ser. 2, 2, app. 9, 1893).

Herbae verisimiliter annuae hirtellae, internodiis 5—15 cm longis; foliorum laminis 3—9 cm longis, 1,5—3 cm latis ovato-oblongis, in apice obtusis, in basi rotundatis et ad petiolos 1—3 cm longos angustatis vel cuneatis margine obtuse serrata, pagina superiore glabra inferiore sparse hirtella; floribus 1—3 in verticillastris bracteis 4—5 mm longis, ovato-acuminatis, fere glabris ciliatis caducis subtentis. glomerulis inter se 1—2 cm distantibus, interdum subplaniculate dispositis; calycibus florentibus 6 mm longis, extus ad venas hispidulis, in maturitate 8 mm longis; corollarum tubo 4 mm longo, labia superiore 2 mm alta, inferiore 3,5 mm longa; styli ramo postico elongato quam inferior multo longiore.

Mexico: Coahuila: San Lorenzo Canon, 6 mi. S. E. of Saltillo.

25. Sect. Potiles.

Herbae annuae erectae hirtellae foliorum laminis ovatis; floribus 6 et ultra in verticillastris bracteis herbaceis perstatis dispositis in spicas cylindratas densas confertis; calycum labia superiore 5-venis; corollarum tubis subcylindratis intus nudis; staminum in galea inclusorum jugis ad medium connexis, gubernaculo oblongo in dentem retrorsum dilato; styli glabri in basi supra ovula articulati ramo superiore acuto inferiore obtuso breviore; gynobasis columella glandulis sessilibus dense obsita perstata, cornu quam ovula paulo longiore. Species una mexicanorum: *S. hispanica*.

131. **S. hispanica** L., Sp. Pl. 25, 1753 per specim. hortatum constituta est; specim. in herb. Linn. vidi. — *S. tetragona* Moench, Meth. 373, 1794 per specim. hortatum constituta est; typum non vidi. — *S. prismatica* Cav., Desc. 14, 1802 (fide Bentham). —

S. Schiedeana Stapf, Kew Bull. 19, 1896 per specimen cultum constituta est; typum in herb. Kew. vidi. — *S. neo-hispanica* Briq. in Ann. Conserv. et Jardin bot. Genève 2, 137, 1898 per *S. hispanicum* L., loc. cit., constituta est. — (?) *S. Chia* Sessé et Moc., Fl. Mex. ed. 2. 9, 1894; specimen ex herb. horti Matrit. vidi. — *S. hispanica* var. *chionocalyx* Fern. in Proc. Am. Acad. 43, 63, 1908 per specim. in Mexico prov. Michoacan prope Uruapan a Pringle (no. 8837½) lectum constituta est; typum in herb. Gray. vidi. — *S. hispanica* var. *intonsa* Fern., loc. cit., per specim. in Guatemala prov. Santa Rosa ad Buena Vista a Heyde et Lux (no. 440) lectum constituta est: typum in herb. Gray. vidi.

Herbae annuae altitudine ad 1 m et ultra superne dense ramosae caulibus appresso-hirtellis cinereis internodiis 2—8 cm longis; foliorum laminis plerumque 5—8 cm longis, ovatis, supra medium acuminatis, in basi rotundatis et ad petiolos 1—6 cm longos angustatis, marginibus subserratis, paginis ambobus plus minusve hirtellis interdum cinereis; floribus 6 et ultra in verticillastris bracteis herbaceis perstatis ovato-acuminatis 5—8 mm longis ciliatis subtentis, glomerulis maximam partem in spicas cylindratas 5—25 cm longas compactas confertis, calycibus florentibus 7,5 ad 8 mm longis extus cinereo-hirsutis rarius hirtellis in maturitate ascendentibus 8—11 mm longis in basi nuculis plus minusve distentis: corollarum tubo 4,5—5,5 mm longo, labia superiore 3 mm alta, inferiore 3.5—5 mm longa; stylo in basi glandulis sessilibus dense obsito supra nuculorum apices articulato.

The plant is cultivated in Mexico and its seeds widely sold: the jelly obtained by soaking them in water is used in a beverage with fruit juices. Other Salvias such as *S. potus* have apparently a similar local use. It may be expected throughout Mexico and Central America and is evidently a native of Central Mexico. It has been collected as far north as New York and apparently is naturalized in Jamaica and Cuba.

26. Sect. **Mitratae.**

Frutices pilis intricate ramosis lanatis saepius aureis vel sulphureis interdum roseo-purpureis vestiti; foliis ovatis rugosissimis; floribus 3—6 in verticillastris in spicis interruptis vel confertis dispositis; calycum labia superiore 5-venis quam inferior longiore; corollarum atro-rubrarum vel fuscarum tubo ventricoso ad basim plus minusve constricto et intus rugis deltoideis binis longitudinaliter ornato; labia superiore erecta quam inferior longiore; staminibus ad fauces positis e galea patentim exsertis, gubernaculo ad connexum in dentem retrorsum producto; stylo pubescente vel

subglabro ramo postico tenuiore breviore; gynobasis cornu ovula subaequante. Plantae praesertim mexicanae: species typica est *S. lasiantha*.

Foliorum laminae 1,5—2 cm longae subtus pilis simplicibus incanae . . . . 133. *S. altimitrata*
Folium laminae 6—10 cm longae subtus pilis ramosis dense lanatae . . . . 132. *S. lasiantha*

132. **S. lasiantha** Benth., Lab. Gen. et Sp. 276, 1833 et in DC. Prodr. **12**, 321, 1848 per specim. in Mexico a Mociño et Sessé lectum constituta est: typum olim in herb. Lambert. hodie in herb. Boissier. et isotypum in herb. horti bot. Matrit. vidi. — *S. chrysantha* Mart. et Gal. in Bull. Acad. Brux. **11**, II, 72, 1844 per specim. in Mexico prov. Oaxaca in Sierra Yavezia ad Hacienda del Socono a Galeotti (no. 667) lectum constituta est; typum in herb. Mus. Brux., isotypos in herb. Kew. et Delessert. vidi. — *S. lantanaefolia* Mart. et Gal. in Bull. Acad. Brux. **11**, II, 69, 1844 per specim. in Mexico prov. Puebla in montibus aridis prope Tehuacan a Galeotti (no. 644) lectum constituta est; typum in herb. Mus. Brux. vidi. — *S. Pittieri* Briq. ex. Dur. et Pitt. in Bull. Soc. Bot. Belg. **30**, 237, 1891 per specim. in Costa Rica in Monte Irazu in Tierra Blanca a Pittier (no. 746) lectum constituta est; typum in herb. Mus. Brux., isotypum in herb. Smithson. vidi. — *S. populifolia* Fern. in Proc. Am. Acad. **35**, 530, 1900 per specim. in Mexico prov. Jalisco prope Bolanos a Rose (no. 2862) lectum constituta est; typum in herb. Smithson. vidi.

Frutex altitudine ad 3.5 m ramulis pilis ramosis dense lanatis ut videtur aureis; foliorum laminis 6—10 cm longis, anguste oblongo-ovatis vel ovatis rarius subcordatis in apice obtusis in basi saepius rotundato-angustatis interdum truncato-subcordatis, petiolis lanatis 1—3 cm longis elatis, pagina superiore atro-viride hirtella bullato-rugosissima inferiore pilis intricate ramosis dense lanatis, marginibus crenulatis; floribus 3—6 in verticillastris bracteis rotundatis lanatis caducis subtentis, in spicis interruptis vel confertis dispositis; calycibus florentibus 8—16 mm longis, in maturitate paulo auctis, extus pilis ramosis densissime lanatis nunc pulcherrime sulfureis nunc purpureis labiis vel acuminatis vel obtusis; corollarum atrorubrarum vel fuscarum tubo 8—10 mm longo, labia superiore erecta 7—16 mm longa, staminibus e galea 3—4 mm exsertis.

Of the two numbers cited by Martens, I consider no. 667 to be the type of *S. chrysantha* as a matter of convenience, since it is represented by duplicates in the Bentham and Delessert herbaria and is thus much more illustrative of the species. The

range in flower size and proportion is noteworthy. While the corolla tube varies but little, the actual and proportional size of the limb is unusual. *S. Pittieri* is a form with a somewhat larger calyx. Other examples from the same region bring it within the range of the Mexican plants. At the same time a collection by Skinner in Guatemala has almost cordate leaves 7—9 cm long and 6—7 cm broad, being very similar to *S. populifolia*. Considering the degree of variability within one region it seems most probable that these forms will prove to be conspecific.

Mexico: Vera Cruz: Orizaba; Puebla: Tehuacan, San Luis Tultitlanapa. Rio San Francisco, Atlixco; Guerrero: inter Tlapa et Tlaliscatilla, Taxco; Oaxaca: Barranca San Luis, Monte Alban, Sierra Yavezia; Chiapas: inter San Cristobal et Teopisca: Guatemala: Huehuetenango: San Sebastian, 2400 m; Aguacatan, 2000—2100 m; Costa Rica: Irazu.

133. **S. altimitrata** Epling sp. nov. per specim. in Mexico prov. Chiapas prope Comitan a Goldman (no. 823) lectum constituta est: typum in herb. Smithson. vidi.

Frutex ut videtur ramulis pilis ramosis sparse villosis et superne inter flores glandulosis; foliorum laminis ovatis vel deltoideo-ovatis plerumque 1,5—2 cm longis, in apice obtusis vel rotundatis, in basi truncato-rotundatis, marginibus crenulatis, pagina superior hirtella, bullulata, viride, inferiore pilis simplicibus incana, petiolis 8—10 mm longis elatis; floribus 1—3 in verticillastris bracteis caducis subtentis in racemis brevibus dispositis; calycibus florentibus 9—10 mm longis, extus pilis subsimplicibus glandulosis viscidis, laciniis acutis; corollarum tubo 11 mm longo, labia superiore 12 mm alta, inferiore subaequilonga; stylo fere glabro.

Chiapas: Comitan.

27. Sect. **Phoeniceae.**

Subsect. *Phoeniceae* Epl. in Rep. Spec. Nov., Beiheft 85, 128, 1936. Species typica est *S. hirtella*.

Herbae perennes foliis ovatis nisi ad margines glabris; floribus 6 et ultra in verticillastris bracteis perstatis subtentis in spicis interruptis dispositis; calycibus extus pilis longioribus capitato-glandulosis hispidis, labia superiore 7-venis; corollarum tubo cylindrato, fere recto intus ad basim papillis binis ornato; staminibus longe exsertis inter tubi medium et fauces positis; stylo glabro, ramo postico breviore. Species una ecuadorensis: *S. hirtella*.

134. **S. hirtella** Vahl, Enum. 1, 249, 1805 per specim. in Peruvia a Jos. Jussieu lectum constituta est; typi iconem et isotypum in herb. Jussieu. vidi. — *S. phoenicea* Kunth in Humboldt et

Bonpland, Voy., Nov. Gen. et Sp. Pl. 2, 302, t. 155, 1817 per specim. in Ecuador ad radicem montis Cotopaxi inter Mulalo et Tambillo a Humboldt et Bonpland (no. 3121) lectum constituta est; typum in herb. Mus. Berolin., isotypum in herb. Mus. Par. vidi.

Herba pulchra radice late repente caulibus pluribus in basi procumbentibus altitudine ad 1 m et ultra, sparse hispido-villosis; foliorum laminis 2—6 cm longis, 12—50 mm latis, subcarnosis, ovatis, obtusis rotundatisve, in basi rotundatis, petiolis 1—4 cm longis elatis, margine crenato-serrata, paginis ambobus glabris, marine saepe hispido-ciliata; floribus 6 et ultra in verticillastris bracteis subrotundis margine hispido-ciliata 3—8 mm longis perstatis subtentis, glomerulis demum inter se 1—1.5 cm distantibus saepius in spicas strictas glanduloso-hispidas approximatis; calycibus florentibus 13—16 mm longis extus glanduloso-hispidis pilis frequenter in basi incrassatis coloratis, in maturitate calycibus paulo auctis, labia superiore rotundata, submucronata, inferioris laciniis acutis, pedicellis 8—12 mm longis villosis elatis; corollarum pulchre coccinearum tubo 20—23 mm longo, intus ad basim papillis duobus ornato, labia superiore 4—5 mm alta, inferiore fere 1 cm diametro; staminibus paulo supra tubi medium positis, filamentis 4—5 mm longis, jugo 24 ad 26 mm longo ad basim connexo, gubernaculo 6—7 mm longo.

Ecuador: Cuenca: ad radicem montis Cotopaxi; inter Tambo de Chimborazo et Macho, 7000—12000 ped.; Riobamba in arenosis humidioribus; Quito; Guanajo; ad Ambato; Alausi, 2500 m; Cumba; Tilulin prope Ambato.

28. Sect. **Mineatae.**

Subsect. *Mineatae* Epl. in Rep. Spec. Nov. 85, 107, 1936. — Species typica est *S. exserta*.

Herbae perennes foliis amplis; floribus 3—6 in verticillastris bracteis caducis subtentis, in spicis interruptis elongatis dispositis; calycum labia superiore 5-venis; corollarum tubo intus nudo, labia inferiore quam superior fere duplo longiore; staminibus e labia superiore longe exsertis ad fauces positis, gubernaculo in dentem acutum ad connexum dilato; styli glabri ramo antico in apice spatulato. Species una montano-argentina: *S. exserta*.

135. **S. exserta** Griseb. in Gött. Abh. 24, 274, 1879 per specim. in Argentinae prov. Jujuy a Lorentz et Hieronymus (no. 985) lectum constituta est; typum in herb. Univ. Gött., isotypum in herb. Mus. Berolin. vidi.

Herba perennis altitudine 70—80 cm caulibus superne pilis brevibus extensis glandulosis vestitis: foliorum laminis 4—8 cm

diametro deltoideo-rotundatis, breviter acuminatis, in basi subtruncatis et ad petiolum 1,5—4 cm longum sparse glandulosum abrupte cuneato-angustatis, margine crenato-serrata, pagina superiore hispidula, inferiore fere glabra; floribus 3—6 in verticillastris bracteis glandulosis 3—4 mm longis caducis subtentis, glomerulis demum inter se 1,5—3 cm distantibus in spicas interruptas strictas 30—40 cm longas interdum paniculatas dispositis; calycibus florentibus 14—17 mm longis, in maturitate paulo auctis miniatis extus pilis extensis glandulosis vestitis, pedicellis ad 1,5 cm longis glandulosis elatis; corollarum tubo intus nudo 23—28 mm longo, labia superior 7—8 mm alta, inferiore 12—15 mm longa, lacinia media ampla 15—16 mm lata; staminum filamentis arcuatis 6—8 mm longis, jugo 30 mm longo infra medium connato, gubernaculo 16 mm longo ad connexum in dentem acutum extensum 1,5 mm longum ampliato.

Argentina: Jujuy; Tucuman: San Pedro de Calalao; Córdoba: ad Huerta Grande in Sierra de Córdoba.

29. Sect. **Rubescentes.**

Subsect. *Rubescentes* Epl. in Rep. Spec. Nov., Beiheft 85, 108, 1936. — Species typica est *S. rubescens*.

Herbae perennes in basi suffruticosae foliis amplis ovato-cordatis saepius tomentosis; floribus in paniculis glandulosis speciosis dispositis; calycum labia superior 3-venis rarius sub-5-venis; corollarum coccinearum vel rubrarum tubo cylindrato subflexuoso intus nudo; staminibus e labia superiore saepius breviter exsertis (vel in *S. orthostachys* omnino inclusis) ad tubi medium positis; stylo piloso; gynobasis cornu ovula duplo triplove superante. Plantae venezuelano-colombianae habitu et foliis consimiles sed tamen corollarum magnitudine et praesertim staminum conformatione inter se differunt. Plantae praesertim colombianae.

Stamina vel breviter exserta vel sub labiam superiorem inclusa; corollarum labia superior 3—9 mm alta
- Corollarum tubi 27—38 mm longi; calyces florentes 12—16 mm longi
  - Corollarum tubi 27—30 mm longi; staminum gubernacula 14—15 mm longa; foliorum laminae superiores hirsutae 137. *S. colombiana*
  - Corollarum tubi 35—38 mm longi; staminum gubernacula 18—21 mm longa; foliorum laminae superiores etiam juvenum glabrae atro-virides . . . . . . 136. *S. melaleuca*

Corollarum tubi 18—24 mm longi; calyces
florentes 7—10 mm longi . . . . 138. *S. rubescens*
Stamina in corollarum tubo inclusa; corolla-
rum labia superior 1—1,5 mm alta . . 139. *S. orthostachys*

136. **S. melaleuca** Epl. in Rep. Spec. Nov., Beiheft **85**, 108, 1936 per specim. in Colombiae prov. Norte de Santander inter Mustiscua et Pamplona a Killip et Smith (no. 19735) lectum constituta est; typum in herb. Mus. Smithson. vidi.

Herba erecta perennis in basi suffruticosa altitudine ad 1,5 m caulibus superne minute puberulis; foliorum laminis 5—8 cm (et ultra?) longis 2,5—5 cm latis, ovato-cordatis, in apice gradatim acuminatis acutissimis, in basi subcordatis, margine crenato-serrata, pagina superiore atro-viride glabra, inferiore albo-tomentella venis reticulatis prominulis, petiolis ad 3 cm longis elatis; floribus 3—12 in verticillastris bracteis, non visis subtentis pedicellis ad 1 cm longis elatis, glomerulis demum inter se 1—3 cm distantibus in paniculis glanduloso-hirsutis dispositis; calycibus florentibus 15—16 mm longis, extus pilis brevissimis extensis et longioribus capitato-glandulosis purpureis vestitis, labiis acuminatis; corollarum tubo sat crasso 35—38 mm longo, intus nudo, labia superiore 10—11 mm alta, leniter concavo-galeata, inferiore 20 mm longa; staminibus breviter exsertis ad tubi medium positis, filamentis 10—11 mm longis, jugo 36—39 mm longo ad medium connexo, gubernaculo 18—21 mm longo.

Colombia: Norte de Santander: inter Mutiscua et Pamplona, 3400 m, ad silvae marginem; Bucarasica inter Ocana et Pamplona, 7500—8600 m, in aprico ad silvae marginem.

137. **S. colombiana** Epl. in Rep. Spec. Nov., Beiheft **85**, 109, 1936 per specim. in Colombiae prov. Santander prope La Baja a Killip et Smith (no. 18144) lectum constituta est; typum in herb. Mus. Smithson., isotypum in herb. Univ. Calif. (Los Angeles) vidi.

Suffrutex altitudine 1—2 m ramis puberulis et pilis longioribus praecipue in nodis ornatis; foliorum laminis 6—9 cm longis, 3—5,5 cm latis, ovato-cordatis, acuminatis, in basi saepius obliquis subcordatis, margine serrulata, pagina superiore viride hirsuta, inferiore albotomentosa, ambobus mollibus, petiolis 1,5—3 cm longis elatis; floribus 6 et ultra in verticillastris bracteis subrotundis glandulosis caducis 5—7 mm diametro subtentis, glomerulis inter se 1—3 cm distantibus in spicas interruptas paniculatas 20—25 cm longas glanduloso-pilosas dispositis; calycibus florentibus extus glandulosis, 12—14 mm longis, in maturitate paulo auctis, labiis hiantibus, superiore leniter recurva acuminata, inferioris laciniis acuminatis ad medium et ultra connatis, am-

bobus 4—4,5 mm longis, pedicellis 5—6 mm longis glandulosis elatis; corollarum tubo 27—30 mm longo intus nudo cylindrato, labia superiore 3—5 mm alta, inferiore 6—7 mm longa; staminibus ad tubi medium positis, filamentis 6 mm longis elatis, jugo 24 ad 25 mm longo paulo supra medium connexo, gubernaculo 14—15 mm longo.

Colombia: Santander: La Baja, in apricis, 3100 m; Vetas, in declivitatibus apricis saxosis.

138. **S. rubescens** Kunth in Humboldt et Bonpland, Voy., Nov. Gen. et Sp. Pl. 2, 301, t. 154, 1817 per specim. verisimiliter in Colombia a Humboldt et Bonpland lectum constituta est: typum in herb. Mus. Par. vidi. — *S. truxillensis* Briq. in Ann. Conserv. et Jard. Bot. Genève 2, 167, 1898 per specim. in Venezuelae andibus Truxillo ed Merida a Linden (no. 378) lectum constituta est; typum in herb. Delessert., isotypum in herb. Mus. Par. vidi.

Herba perennis vel suffrutex ut videtur caulibus pubescentibus interdum tomentosis; foliorum laminis 6—16 cm longis, 4—9 cm latis, ovatis, acutis vel acuminatis, in basi leniter cordatis, margine crenato-serrata, pagina superiore hirtella, inferiore interdum incano-tomentella albo-tomentosa, petiolis 3—8 cm longis elatis; floribus 3—12 in verticillastris bracteis 3—4 mm longis, dense villoso-glandulosis caducissimis subtentis, glomerulis demum inter se 0,5—5 cm distantibus in paniculis dense glanduloso-villosis purpureis singularibus dispositis; calycibus florentibus 7—10 mm longis, purpureo-glandulosis, in maturitate 10—14 mm longis, labia superiore mucronata, inferioris laciniis acuminatis, infra medium connatis, pedicellis glandulosis 5—12 mm longis elatis; corollarum tubo 18—24 mm longo, subcylindrato, intus nudo, labia superiore 3—5 mm alta, inferiore 8—10 mm longa: staminibus non exsertis paulo ad tubi medium positis, filamentis 4 mm longis, jugo 16—17 mm longo ad medium connexo, gubernaculo 8—9 mm longo ad connexum in dentem deltoideum dilatato.

Venezuela: Merida: in andibus Trujillo et Merida; in Paramo de los Apartaderos, 3300 m; ad S. Rafael de Mucuchies; ad S. Rafael, 3185 m. — Colombia: Norte de Santander: inter Ocana et Pamplona; Cundinamarca: San Cristobal juxta Bogota, 2800 ad 2900 m: El Cauca: inter Rio Piendamo et Rio Palace, 1700 ad 1900 m.

139. **S. orthostachys** Epl. in Rep. Spec. Nov., Beiheft 85, 110, 1936 per specim. in Colombiae prov. Norte de Santander inter Pamplonita et Chinacota in valle Rio Pamplonita a Killip et Smith (no. 20746) lectum constituta est; typum in herb. Mus. Smithson., isotypum in herb. Univ. Calif. (Los Angeles) vidi.

Herba perennis altitudine ad 1,5 m caulibus superne nunc cinereo nunc incano-pubescente; foliorum laminis cordato-ovatis, 6—12 cm longis, 5—8 cm latis, in apice nunc obtusis nunc breviter acuminatis, in basi cordatis, margine crenato-serrata, pagina superiore cinereo-viride hirtella inferiore praesertim juvenum albo-tomentosa mollissima interdum in maturitate cinerea, petiolis 1—2,5 cm longis elatis; floribus numerosis in verticillastris bracteis ovato-caudatis hirtellis 6—10 mm longis caducis subtentis, glomerulis demum globosis inter se 1—2,5 cm distantibus in spicas interruptas strictas paniculatas angustas ad 50 cm longas dispositis; calycibus florentibus 6—7 mm longis rubrotinctis extus pilis extensis capitato-glandulosis et brevioribus vestitis viscidis, in maturitate 7—7,5 mm longis, labia superiore truncata, inferioris laciniis breviter acuminatis, pedicellis 2—3 mm longis elatis; corollarum tubo 12—15 mm longo intus nudo, labiis prorata brevissimis superiore 1,5 mm alta, inferiore 4.5 mm longa; staminibus paulo supra tubi medium positis in tubo inclusis, filamentis 2 mm longis, jugo 7—8 mm longo supra medium connexo, gubernaculo 5—5.5 mm longo.

Colombia: Norte de Santander: inter Pamplonita et Chinacota, in valle Rio Pamplonita in dumetis, 1300—1800 m; inter Mutiscua et Pamplona in declivitate aprico, 2700 m; Santander: in declivitate occidentale Paramo de Santurban ad Tona, 2200 ad 2800 m.

30. Sect. **Biflorae.**

Salvia sect. *Calosphace* subsect. *Longiflorae Biflorae* Benth. in DC. Prodr. 12, 325. 1848 per species quatuor constituta est; *S. oppositifloram* speciem normalem designo.

Herbae perennes interdum suffrutices foliis plus minusve deltoideis nunc glabris nunc subtus incanis; floribus oppositis solitariis in verticillastris in racemis strictis gracilibus dispositis bracteis caducis subtentis; calycum labia superiore 5-venis, venis costatis; corollarum tubo leniter arcuato intus nudo superne gradatim ampliato nullomodo ventricoso, labiis subaequilongis vel inferiore breviore, staminibus quam labia superior longioribus et patentim exsertis, ad tubi medium positis, gubernaculo integro; styli glabri ramo postico quam anticus multo breviore. Plantae andinae praesertim peruvianae.

Folia glaberrima rarius minute glandulosa interdum sparsissime hispidula . . . . . 143. *S. oppositiflora*
Folia subtus incano-pubescentia interdum glanduloso-hispida

Folia utrimque glanduloso-hispida sordida
rugosa . . . . 140. *S. squalens*
Folia subtus molliter incano-pubescentia
Folia maximam partem 12—25 mm lata,
in basi rotundata . . . . 142. *S. striata*
Folia maximam partem 2,5—5,5 cm lata
in basi cordata . . . . 141. *S. tubiflora*

140. **S. squalens** Kunth in Humboldt et Bonpland, Voy., Nov. Gen. et Sp. Pl. 2, 297, 1817 per specim. verisimiliter in Ecuador versus Loja a Humboldt et Bonpland lectum constituta est; typum in herb. Mus. Par. vidi.

Herba perennis altitudine ad 2 m caulibus sordide glandulosis viscidis; foliorum laminis 4—7 cm longis, 2—5 cm latis, deltoideo-ovatis, in apice obtusis vel rotundatis, in basi cordatis, petiolis viscidis 1—3 cm longis elatis, margine irregulariter crenulata, paginis ambobus rugosis glanduloso-hispidis, inferiore saepius reticulato-venulosa; floribus solitariis in verticillastris bracteis ovato-acuminatis glandulosis caducis 7—10 mm longis subtentis, glomerulis demum inter se circiter 1 cm distantibus in racemis strictis angustis viscido-glandulosis 10—20 cm longis dispositis; calycibus florentibus 10—15 mm longis, venis costatis, extus viscido-glandulosis sordidis, in maturitate vix auctis, labiis 4—6 mm longis, ovatis, acuminatis, inferioris laciniis infra medium connatis, pedicellis 5—6 mm longis elatis; corollarum tubo 22—24 mm longo, intus nudo, labia superiore 10 mm alta, inferiore circiter 10 mm diametro; staminibus paulo supra tubi medium sitis, filamentis 2 mm longis, jugo 25—30 mm longo infra medium connexo, gubernaculo 12—13 mm longo.

Ecuador: Nabon: inter Ona et Cuenca, 2700—3000 m; inter Loja et San Lucas; prope Loja, 7300 ped.

141. **S. tubiflora** Smith, Ic. Ined. 26, t. 26, 1790 per specim. in Peruviae prov. Lima ad Huanca prope Lima in agris a Dombey lectum constituta est; typum in herb. Mus. Brit. vidi. — *S. biflora* R. et P., Fl. peruv. 1, 24, t. 38, f. a. 1798 per specim. in Peruviae prov. Lima prope Chancay in montibus arenosis Huara a Ruiz et Pavon lectum constituta est; specim. certum in herb. Mus. Berolin. vidi. — *S. excisa* R. et P., Fl. peruv. 1, 25, t. 36 f., a. 1798 per specim. in Peruvia a Ruiz et Pavon lectum constituta est; specim. certum non vidi. — *S. scrobiculata* Meyen, Reise 2, 45, 1835 per specim. in Peruviae prov. Arequipa inter Arequipa et Islay a Meyen lectum constituta est; typum probabilem in herb. Mus. Berolin., isotypum in herb. Kew vidi. — *S. biflora* var. *glabrata* Benth., Lab. Gen. et Sp. 279, 1833 et in DC. Prodr. 12,

325, 1848 per *S. excisam* R. et P., loc. cit., constituta est; typum olim in herb. Lamb. non reperire potui.

Herba perennis suffruticosa ramis elongatis vel villosis vel glandulosis; foliorum laminis 3—6 cm longis, 2,5—5,5 cm latis, vel subcordatis vel late ovatis, in apice obtusis, saepius in basi cordatis, margine crenata, pagina superiore fere glabra interdum rugosa, inferiore praesertim ad venas incano-villosa, petiolis 1—2 cm longis villosis elatis; floribus 1—3 in verticillastris bracteis ovatis acuminatis hirtellis 8—12 mm longis subtentis glomerulis inter se 1—5 cm distantibus in racemis villosis strictis interdum glandulosis 10—30 cm longis dispositis; calycibus florentibus extus vel albo-villosis vel pilis extensis glandulosis sordidis, 15—16 mm longis, in maturitate vix auctis, labiis 4 mm longis acutis, inferioris laciniis ad medium et ultra connatis, pedicellis 5—6 mm longis elatis; corollarum tubo 30 ad 35 mm longo superne ampliato intus nudo, labia superiore 10 ad 11 mm alta, inferiore breviore; staminibus ad tubi medium positis, filamentis 3 mm longis, jugo 33—42 mm longo, gubernaculo 13—15 mm longo.

The type of *S. tubiflora* bears calyces which are white villous and not glandular; most of the specimens from Lima are like this but those from Arequipa and Chile are glandular. However, they do not appear to differ in other ways. Cuming's specimen, presumably from Lima, is glandular and Weberbauer and Johnston's plants from Mollendo show some degree of transition. If a specific name is desired for the glandular plant *S. excisa* should be used.

Peruvia: Lima: Atocongo, 250—500 m: in montibus prope Barranco, 400—500 m; ad Huanca prope Lima: Arequipa: in pampa Grande de Arequipa; Mollendo, in collibus apricis: Chile: Antofagasta: ad Paposo in desertis aridis Atacama; Taltal: ad Aguada de Cordon, 24° 45′ S.: prope Aguada de Miguel Diaz, 24° 35′ S.

142. **S. striata** Benth. in DC. Prodr. 12, 343, 1848 per specim. in Peruviae prov. Amazonas prope Chachapoyas a Matthews (no. 3155) lectum constituta est; typum in herb. Kew., isotypum in herb. Delessert. et Univ. Calif. (Los Angeles) vidi. — *S. adenoclada* Briq. in Ann. Conserv. et Jard. Bot. Genève 2, 155, 1898 per specim. in Peruviae prov. Amazonas prope Chachapoyas a Mathews (sine numero) lectum constituta est; typum in herb. Delessert. vidi.

Suffrutex altitudine ad 1 m ramis pubescentibus plus minusve glandulosis, internodiis 1—10 cm longis; foliorum laminis 2—5 cm longis, 12—25 mm latis, ovatis, obtusis, in basi rotundatis

etiam subcordatis. petiolis 8—20 mm longis villosis elatis. margine crenato-serrata, pagina superiore hirtella viride inferiore incano-villosa; floribus solitariis in verticillastris bracteis 5—8 mm longis ovato-acuminatis pubescentibus vix glandulosis caducis subtentis, glomerulis demum inter se 1—2 cm distantibus; calycibus florentibus extus nunc hirtellis nunc glandulosis 9—12 mm longis, venis costatis in maturitate paulo auctis, labiis 3 mm longis, saepius acutis, inferioris laciniis supra medium connatis, pedicellis 3—6 mm longis hirsutis elatis; corollarum tubo 21—25 mm longo, intus nudo, labia superiore 6—10 mm alta, inferiore subaequilonga; staminibus ad tubi medium positis, filamentis 3 mm longis, jugo 26—33 longo, gubernaculo 10—12 mm longo pubescente.

Despite the wide range here indicated the plants from Cuzco are remarkably similar to Mathew's. *S. adenoclada* was based upon the same collection as Bentham's species.

Peruvia: Amazona: Chachapoyas: Cuzco: in valle Urubamba prope Calca, 3000 m; Ollantaytambo, 3000 m.

143. S. **oppositiflora** R. et P., Fl. peruv. 1, 26, t. 43, 1798 per specim. in Peruviae prov. Junin in locis altis aridis et ventosis prope Tarma a Tafalla lectum constituta est; specim. certum in herb. Berolin. vidi. — *S. grata* Vahl, Enum. 1. 244, 1805 per specim. in Peruviae prov. Junin in locis aridis et ventosis prope Tarma verisimiliter a Tafalla lectum constituta est: typum non vidi. — *S. strictiflora* Hook., Bot. Misc. 2, 234, 1831 per specim. in Peruviae prov. Lima in valle Canta inter Yazo et Obrajillo a Cruikshanks lectum constituta est; typum in herb. Kew. vidi. — *S. cupheaefolia* Kunth in Humboldt et Bonpland, Voy., Nov. Gen. et Sp. Pl. 2, 288. 1817 per specim. in sylvis peruvianis a Humboldt et Bonpland lectum constituta est; typum in herb. Mus. Par. vidi.

Herba perennis in basi suffruticosa altitudine 20—50 cm; ramulis crispule pubescentibus superne pilis extensis glandulosis sparse vestitis; foliorum laminis 2—5 cm longis, 12—30 mm latis, deltoideo-ovatis, acutis, in basi rotundatis vix subcordatis, petiolis 0,5—1,5 cm longis elatis, margine serrata, paginis ambobus glabris nisi inferiore minutissime viscido-puberula vel sparsissime hispidula; floribus saepius solitariis in verticillastris bracteis obovatis vel ovato-acuminatis 12—15 mm longis glandulosis caducis subtentis, glomerulis demum inter se 1—2 cm distantibus, in racemis strictis angustis glandulosis 15—26 cm longis dispositis; calycibus florentibus 10—20 mm longis. venis costatis, extus glanduloso-hispidis rarius omnino glabris in maturitate vix auctis, labiis 3—4 mm longis, superiore acuminata. inferioris laciniis ad medium et ultra connatis acuminatis, pedi-

cellis 4—5 mm longis elatis; corollarum tubo 16—30 mm longo, intus nudo, labia superiore 5—10 mm alta, inferiore subaequilonga; staminibus ad medium positis, filamentis 2,5—3 mm longis. jugo 20—38 mm longo infra medium connexo, gubernaculo 6—14 mm longo pubescente.

S. cupheaefolia differs only in the glabrous calyces and since it has been found growing with typical specimens at the type locality of *S. oppositiflora* I regard it as a form only.

Peruvia: Lima: inter Matucana et Tambo, 2370—2650 m; inter Yazo et Obrajillo in valle Canta; Callacate; in Cuesta de Huamantanga et Purruchuca; Chavanillo 8000 ped., in dumeto; in declivitatibus saxosis apricis prope Canta; in praeruptis saxosis ad Rio Chillon prope Viscas. 2000—2400 m; La Libertad: ad radices Cerro Marcahuamachuco in dumetis; Ayacucho: Huancayo, 3300—3500 m, in declivitate aprico saxoso; Junin: Tarma in locis aridis altis et ventosis; prope Oroya in glareosis 10000—13000 ped.; Cuzco: in declivitatibus saxosis prope San Sebastian, 3300 ad 3400 m; ad Chaspyoc ad Rio Huarocondo, 10000 ped.; Cuzco, 3200—3500 m; Checacupe, 3400—3450 m; prope Huasao, 3200 m; sequentes sunt „*S. cupheaefoliae*“: La Legia; Tarma 3000 ad 3200 m.

31. Sect. **Cylindriflorae.**

Subsect. *Cylindriflorae* Epl. in Rep. Spec. Nov., Beiheft 85, 118. 1936. Species typica est *S. cylindriflora*.

Frutices vel suffrutices foliis ovatis frequenter lanceolatis; floribus 1—3 in verticillastris; calycibus extus nunc glabris nunc glanduloso-hispidis labia superiore 5—7-venis; corollarum tubo cylindrato leniter arcuato intus vel (*S. praeclarae*) in basi areola pubescente ornato; staminibus quam labia superior longioribus et patentim exsertis supra tubi medium ad fauces positis; stylo glabro.

Plantae andinae praesertim peruvianae saepius minus cognitae.

Folia integra 1—2,5 cm longa glabra . . 156. *S. integrifolia*
Folia serrulata 4—15 cm longa rarius glabra
  Folia pulchra omnino glabra; calycum labiae in caudas 2,5—4 mm longas extenuatae . . . . 155. *S. Rusbyi*
  Folia plus minusve pubescentia; calycum labiae acuminatae vix caudatae
    Foliorum et saepius ramorum pili ramosi 154. *S. Haenkei*
    Foliorum et ramorum pili simplices
      Plantae ecuadorenses vel (*S. hirtae* pro parte) peruvianae

Calycum labia superior quam inferioris laciniae patentim longior; corollarum labia inferior quam superior longior . . . . 147. *S. Sprucei*

Calycum labiae subaequilongae vel superior brevior; corollarum labia inferior quam superior brevior

Calyces florentes 8—11 mm longi vel glabratae vel pilis brevibus hirtelli nonnulli pilis extensis glandulosis conspersi

Rami superne fere glabri villosi nec glandulosi . . . . 144. *S. quitensis*

Rami superne pilis longioribus capitato-glandulosis mucidi . . 145. *S. hirta*

Calyces florentes 12—14 mm longi extus pilis longioribus solum capitato-glandulosis vestiti . . . 146. *S. trachyphylla*

Plantae peruvianae, etiam bolivianae

Folia lanceolata 15—20 mm lata, pagina inferiore velutino-tomentella . . . . 153. *S. hapalophylla*

Folia ovata vel ovato-lanceolata 2,5 ad 7 cm lata nec velutina

Calyces florentes 17—19 mm longi, in maturitate 20—23 mm longi

Corollarum tubi 43 mm longi . 152. *S. cylindriflora*

Corollarum tubi 27 mm longi . 148. *S. mucidistachys*

Calyces florentes 9—14 mm longi, in maturitate 12—17 mm longi

Corollarum tubi intus ad basim areola deltoidea pilorum hispidulorum ornati . . . . 149. *S. praeclara*

Corollarum tubi intus nudi

Calyces extus glabrati; stamina ad fauces posita . . . . . 151. *S. psilantha*

Calyces extus villosi; stamina paulo supra tubi medium posita . . . . 150. *S. Heerii*

144. **S. quitensis** Benth. in DC. Prodr. 12. 339, 1848 per specim. in Ecuador prov. Pichincha prope Quito in declivitatibus facies occidentalis montis Pichincha a Jameson lectum constituta est; typum in herb. Kew. vidi.

Frutex speciosus elegans ramulis gracilibus nunc sparse villosis nunc subglabris; foliorum laminis 5—10 cm longis, 2—5 cm latis, nunc ovatis nunc sublanceolatis, acutis, in basi rotundatis rarius leniter cordatis, petiolis 1,5—3 cm longis elatis, margine serrata, paginis ambobus vel sparse villosis vel subglabris; floribus 1—3 in verticillastris bracteis rotundato-obovatis fere glabris ciliolatis acuminatis 8—10 mm longis caducis subtentis, glomerulis demum inter se 1—2 cm distantibus in spicis interruptis pulchris 10—20 cm longis dispositis; calycibus florentibus extus nunc glabris nunc villosis saepius purpureis margine ciliolata intus hispidula 8—11 mm longis, campanulatis, in maturitate 13 mm longis, labia superiore 3 mm longa rotundata obtusissima mucronata, inferioris laciniis breviter acuminatis, pedicellis 8—10 mm longis elatis; corollarum tubo 27—28 mm longo intus nudo, labia superiore 6—8 mm alta, inferiore subaequilonga; staminibus paulo supra tubi medium positis, filamentis 5—6 mm longis, jugo 37—40 mm longo infra medium connexo. gubernaculo 15—16 mm longo.

Ecuador: in monte Pellzhum 12000 ped.; in monte Chimborazo; in monte Corazu, 2700—2900 m; in decliv. occ. montis Pichincha, 11500 ped.; Canar; Cuena; in valle Lloa.

145. **S. hirta** Kunth in Humboldt et Bonpland, Voy., Nov. Gen. et Sp. Pl., 2, 296, 1817 per specim. in Peruviae prov. Piura prope pagum Ayavaca et villam Lucarque a Humboldt et Bonpland (no. 3468) lectum constituta est; typum in herb. Mus. Par. vidi.

Frutex ut videtur ramis gracilibus superne pubescentibus: foliorum laminis 4—8 cm longis, 2—4,5 cm latis. anguste ovatis vel ovato-lanceolatis acutis, in basi rotundatis, interdum subcordatis, margine crenato-serrata, pagina superiore hirtella subglabra, inferiore villosula, petiolis 1—3 cm longis villosis elatis; floribus 1—3 in verticillastris bracteis ovato-caudatis 5—8 mm longis hirtellis margine glanduloso-ciliata caducis subtentis, glomerulis demum inter se 1—2 cm distantibus in paniculis pilis 1 ad 2 mm longis mucidis ornatis dispositis; calycibus florentibus 10—11 mm longis. extus hispidulis et pilis glandulosis longioribus conspersis, in maturitate paulo auctis, labia superiore 2,5—3 mm longa acuminata, inferioris laciniis acuminatis paulo longioribus infra medium connatis, pedicellis 4—6 mm longis hispidulis elatis; corollarum tubo 25 mm longo intus nudo, labia superiore 4 mm alta, inferiore subaequilonga; staminibus supra tubi medium positis, filamentis 3,5 mm longis, juro 27—30 mm longo infra medium connexo, gubernaculo 11—12 mm longo.

Peruvia: Piura: prope pagum Ayavaca et villam Lucarque; Ecuador: Loja; vicum Sasaranga.

146. **S. trachyphylla** Epl. in Rep. Spec. Nov., Beiheft 85, 119, 1936 per specim. in Ecuador prov. Tungurahua prope Ambato ad Cusatagua a Pachano (no. 202) lectum constituta est; typum in herb. Smithson. vidi.

Frutex ut videtur ramis superne pubescentibus; foliorum laminis subcoriaceis 6,5—7 cm longis, 2,5—3,2 mm latis, ovato-lanceolatis, acutis, in basi subcordatis, petiolis 1—2 cm longis pubescentibus elatis, margine crenato-serrulata, pagina superiore subbullulata hispidulo-aspera, inferiore villosula; floribus 1—3 in verticillastris bracteis caducis, non visis subtentis glomerulis demum inter se 1—3 cm distantibus, in spicas interruptas laxas pilis extensis eglandulosis sparse conspersas dispositis; calycibus florentibus extus pilis extensis glandulosis conspersis, 12 ad 14 mm longis, labia superiore obtusa, inferioris laciniis brevioribus acutis, in maturitate paulo auctis pedicellis 4—6 mm longis glandulosis elatis; corollarum tubo 25 mm longo intus nudo, labia superiore 7—8 mm alta, inferiore subaequilonga 10 mm lata; staminibus ad fauces positis, filamentis 6—7 mm longis, gubernaculo 14 mm longo.

Ecuador: Cusatagua prope Ambato.

147. **S. Sprucei** Briq. in Ann. Conserv. et Jard. Bot. Genève 2, 171, 1898 per specim. in Ecuador prope Llalla in silvis a Spruce (no. 5990) lectum constituta est; typum in herb. Delessert., isotypos in herb. Kew., Gray., Par., Univ. Calif. (Los Angeles) et Vindob. vidi. — *S. Theresae* Briq. in Beih. Bot. Centralbl. 13, 82, tab. II, fig. 4—5, 1902 per specim. in Ecuador inter Pucara et San Antonio a Princess Therese von Bayern lectum constituta est; typum in herb. Monac. vidi. — ? *S. ayavacensis* Kunth in Humboldt et Bonpland, Voy., Nov. Gen. et Sp. Pl. 2, 298, 1817 per specim. in Peruviae prov. Piura prope Ayavaca et ad ripam fluminis Cutaco a Humboldt et Bonpland lectum constituta est; typum mancum in herb. Mus. Par. vidi.

Frutex altitudine ad 4 m et ultra ramosus aromaticus, ramulis dense hirsuto-villosis; foliorum laminis 6—11 cm longis, 3,5—4,5 cm latis, anguste ovatis, acutis, in basi pulchre rotundatis, margine crenato-serrata, pagina superiore hirsuta, rugulosa, inferiore molliter tomentosa juvenum flavida, petiolis tomentosis 2—3 cm longis elatis; floribus 1—6 in verticillastris bracteis caducis non visis subtentis, glomerulis demum inter se 1—2 cm distantibus, in paniculis glandulosis dispositis; calycibus florentibus 15—17 mm longis glanduloso-pubescentibus venis costatis, in maturitate fere 2 cm longis tubulosis, labia superiore 4—5 mm longa, in-

ferioris laciniis acutis brevioribus infra medium connatis, pedicellis 8—10 mm longis glandulosis elatis; corollarum tubo 24 mm longo, intus nudo, labia superiore 6 mm alta, inferiore longiore; staminibus supra tubi medium positis, filamentis 4 mm longis, jugo 33—35 mm longo ad medium connexo gubernaculo 15—16 mm longo.

Ecuador: Llala in sylvis; ad ped. occ. Chimborazo; Quaranda; S. Miguel; inter Chimbo et Targe prope Chimborazo 8000—9000 ped.; Canar; Huigra; inter Pucara et San Antonio; in Cordillera occ. supra Balsapampa.

148. **S. mucidistachys** Epl. in Rep. Spec. Nov., Beiheft 85, 120, 1936 per specim. in Peruviae prov. Piura prope Ayavaca a Weberbauer (no. 6399) lectum constituta est, typum in herb. Mus. Field. et fragmentum in herb. Smithson. vidi. — ? *S. ayavacensis* Kunth in Humboldt et Bonpland, Voy., Nov. Gen. et Sp. Pl. 2, 298, 1817 per specim. in Peruviae prov. Piura prope Ayavaca et ad ripam fluminis Cubaco a Humboldt et Bonpland lectum constituta est; typum mancum in herb. Mus. Par. vidi.

Herba perennis altitudine 60 cm, caulibus erectis simplicibus pilis extensis plus minusve glandulosis hirsutis internodiis plerumque quam folia brevioribus; foliorum laminis deltoideo-cordatis 4—6 cm diametro, in apice obtusiusculis infimis petiolis ad 4,5 cm longis elatis supremis subsessilibus remotis, marginibus crenatis, paginis ambobus molliter pubescentibus ut videtur concoloribus; verticillastris 3—6-floribus sat remotis; calycibus florentibus 17—18 mm longis extus pilis glandulosis mucidis sat dense hirsutis, labia superiore 7-venis acuminatis quam inferior longiore, in maturitate ad 20 mm longis pedicellis 10—13 mm longis elatis; corollarum tubo 27 mm longo intus nudo, labia superiore 10 mm alta inferiore longiore 14—15 mm lata; staminibus ad fauces positis, filamentis 4 mm longis, jugo 38 mm longo, ad medium connexo, gubernaculo 20 mm longa.

Peruvia: Piura: prope Ayavaca.

149. **S. praeclara** Epl. in Rep. Spec. Nov., Beiheft 85, 921, 1936 per specim. in Peruvia in valle Mecoya a Pearce (no. 639) lectum constituta est; typum in herb. Kew., isotypum in herb. Univ. Calif. (Los Angeles) vidi.

Frutex pulcher altitudine ad 2 m ramis glanduloso-hirsutis; foliorum laminis 8—8,5 cm longis, 2,5—4 cm latis, deltoideo-lanceolatis, acutissimis, in basi rotundatis, subtruncatis, petiolis 3—5 cm longis elatis, margine recta, irregulariter serrata, paginis ambobus hispidulis; floribus tribus in verticillastris bracteis caducissimis 3—4 mm longis ovato-acuminatis hispidulis subtentis glomerulis demum inter se 1—2 cm distantibus in spicas

interruptas speciosas paniculatas approximatis; calycibus florentibus 10 mm longis extus glanduloso-hirsutis, in maturitate 12 ad 13 mm longis, labia superiore rotundata mucronata, inferioris laciniis acuminatis brevioribus, pedicellis 3—5 mm longis elatis; corollarum praeclare incarnatorum tubo 25 mm longo, intus supra basim areola deltoidea pilorum hispidulorum brevissimorum ornato, labia superiore 7—8 mm alta, inferiore subaequilonga; staminibus ad fauces positis, filamentis 9 mm longis, jugo 32 mm longo paulo infra medium connexo, gubernaculo 13 mm longo ad connexum in dentem acutum 1,5 mm longum dilato.

Bolivia: in valle Mecoya, 2600 m.

150. **S. Heerii** Regel in Gartenflora 4, 77, t. 115, 1855 per specim. hort. e seminibus peruvianis a Warscewicz lectis in hort. Zurich. cultum constituta est; specimen verisimiliter certum in herb. Boiss. et specim. in loco ignoto a Warscewicz lectum in herb. Kew. vidi. — ? *S. boliviana* Van Houtte in Fl. des Serres II, 1, 151. 1856 per specim. hortatum e seminis bolivianis a Warscewicz lectis eductum constituta est; typum verum non vidi.

Frutex ramis pilis extensis pubescentibus; foliorum laminis 5—13 cm longis. 3—7 cm latis, anguste ovatis, acuminatis, in basi rotundatis etiam cordatis, margine crenato-serrata, paginis ambobus hirtello-pubescentibus, inferiore pallidiore etiam incana, petiolis 2—8 cm longis elatis; floribus 1—3 in verticillastris bracteis ovatis vel obovatis acuminatis hirtellis ciliatis 5—8 mm longis caducis subtentis, glomerulis demum inter se 0,5—1 cm distantibus in paniculis pulchris villosulis et saepius pilis glandulosis vestitis dispositis; calycibus florentibus 9—12 mm longis extus villosis viscidis, labiis acuminatis 2.5—4 mm longis, in maturitate non visis; corollarum tubo fere 25—26 mm longo intus nudo, labia superiore 6 mm alta, inferiore subaequilonga; staminibus paulo supra tubi medium positis, filamentis 4 mm longis, jugo 34—47 mm longo, infra medium connexo, gubernaculo 14—17 mm longo.

Peruvia: Cajamarca: inter Chota et Cutervo.

151. **S. psilantha** Epl. in Rep. Spec. Nov., Beiheft 85, 121, 1936 per specim. in Peruviae prov. Junin ad Parahuanca a Weberbauer (no. 6590) lectum constituta est; typum in herb. Univ. Calif. (Los Angeles), isotypum in herb. Field Mus. et Smithson. vidi.

Herba perennis ut videtur caulibus superne pilis brevibus praesertim in sulcis pubescentibus; foliorum laminis late ovatis 8—11 cm longis. 6—8 mm latis, in basi rotundatis in apice acuminatis, margine serrata, paginis ambobus fere glabris, petiolis

2,5—4 cm longis elatis; floribus in spicas interruptas approximatis, verticillastris inter se 1—2 cm distantibus bracteis lanceolatis ciliatis caducis 5—8 mm longis subtentis; calycibus florentibus 12—14 mm longis extus fere glabris in maturitate 17—18 mm longis venis costatis, labiis acuminato-caudatis, pedicellis gracilibus 4—6 mm longis elatis; corollarum tubo gracile cylindrato 27—28 mm longo, intus nudo; labia superiore 8—9 mm alta, inferiore breviore; staminibus ad fauces positis 5—8 mm exsertis.

Peruvia: Junin: Parahuanca, 2400 m.

152. **S. cylindriflora** Epl. in Rep. Spec. Nov., Beiheft 85, 122, 1936 per specim. in Peruviae prov. Piura prope Huancabamba a Pearce (no. 565) lectum constituta est; typum in herb. Kew., isotypum in herb. Univ. Calif. (Los Angeles) vidi.

Frutex ut videtur ramis villosis; foliorum laminis 10—15 cm longis, 3,5—4,5 cm latis, ovato-lanceolatis, acuminatis, in basi rotundato-subcordatis, margine serrata, pagina superiore hispidula, inferiore praesertim ad venas villosula, petiolis villosulis 3—4 cm longis elatis; floribus tribus in verticillastris bracteis caducis non visis subtentis, glomerulis demum inter se 1—4 cm distantibus, in spicas interruptas rufo-villosas paniculatas dispositis; calycibus florentibus subcylindratis 18—19 mm longis, extus hispido-villosis, glandulosis, in maturitate 22—23 mm longis, labia superiore inferioris laciniisque acutis 4—5 mm longis, pedicellis hispido-villosis 8—16 mm longis elatis; corollarum cylindratarum tubo 43 mm longo, intus nudo superne gradatim longe leniterque ampliato, labia superiore 6 mm alta, inferiore subaequilonga; staminibus ad fauces positis, filamentis 5 mm longis, jugo 23 mm longo supra tubi medium connexo, gubernaculo 14 mm longo.

Peruvia: Piura: prope Huancabamba.

153. **S. hapalophylla** Epl. in Rep. Spec. Nov., Beiheft 85, 122, 1936 per specim. in Peruviae prov. Cuzco in valle Marcapata prope Chilechile a Weberbauer (no. 7858) lectum constituta est; typum in herb. Mus. Field., isotypum in herb. Univ. Calif. vidi.

Suffrutex altitudine ad 80 cm caulibus ut videtur solitariis e caudice subterraneo, internodiis mediis 1—1,5 cm longis, canescentibus, velutino-tomentellis; foliorum laminis lanceolatis, mediis 8—10 cm longis, 15—20 mm latis, longe leniterque acuminatis, in apice acutis, in basi rotundato-angustatis, supremis sessilibus, infimis petiolis 3—4 mm longis velutinis elatis, marginibus acute regulariter serrulata, pagina superiore molliter hirtella sicca atro-viride, inferiore canescente, velutino-tomentella; floribus in spicis interruptis gracilibus 10—15 cm altis dispositis, maximam partem tribus in bracteorum axillis, bracteis caducis ovato-acuminatis velutinis 3—5 mm longis subtentis,

verticillastris inter se 1—1,5 cm distantibus, pedicellis 2—3 mm longis elatis; calycum florentium tubo extus pilis brevissimis extensis ut videtur flavidis velutino 6—7 mm longo, in maturitate verisimiliter aucto, labiis 2,5—3 mm longis, supremo paulo breviore; corollarum coccinearum tubo extus flavido-villoso 26—28 mm longo, labia superiore ad 1,5 mm emarginata 6—6,5 mm alta, inferiore subaequilonga; staminibus ad fauces positis, filamentis 3,5 mm longis, jugo 22—24 mm longo ad medium connexo, gubernaculo 10—11 mm longo.

Peruvia: in prov. Quispicanchi, Cuzco, in valle Marcapata prope Chilechile, 2200—2300 m (grass steppe mixed with shrubs and alternating with shrub-woods).

154. **S. Haenkei** Benth., Lab. Gen. et Sp. 283, 1833 et in DC. Prodr. 12, 345. 1848 per specim. verisimiliter in Bolivia a Haenke lectum constituta est: typum in herb. Monac. vidi. — *S. avicularis* Briq. in Bull. Herb. Boiss. 4, 866, 1896 per specim. in Boliviae prov. Cochabamba prope oppidum Cochabamba a Kuntze lectum constituta est; typum in herb. Delessert., isotypos in herb. Smithson. et horti bot. Nov. Eborac. vidi. — *S. pseudoavicularis* Briq. in Bull. Herb. Boiss. 4, 867, 1896 per specim. in Bolivia prope Tunari a Kuntze lectum constituta est; typum in herb. Delessert., isotypum in herb. horti bot. Nov. Eborac. vidi. — *S. Bridgesii* Britton ex Rusby in Bull. Torrey Bot. Cl. 124, 1900 per specim. in Boliviae prov. La Paz prope oppidum La Paz a Rusby (no. 1496) lectum constituta est; typum in herb. horti bot. Nov. Eborac. vidi.

Frutex altitudine ad 2,5 m ramis demum glabris ramulis pilis ramosis interdum simplicibus glandulosis flocoso-tomentosis; foliorum laminis coriaceis 4—14 cm longis, 1—4 cm latis, lanceolatis, acutis, in basi rotundato-angustatis, petiolis 5—20 mm longis pubescentibus elatis, margine crenato-serrata, pagina superiore bullato-rugosa subglabra, inferiore pilis ramosis saepe flavis brevibus incano-tomentosis; floribus maximam partem tribus in verticillastris bracteis ovato-lanceolatis, interdum lineari-lanceolatis pubescentibus 5—20 mm longis deciduis subtentis, glomerulis demum inter se 0,5—2,5 cm distantibus, in spicis interruptis saepius 15—20 cm longis dispositis; calycibus florentibus 10—12 mm longis extus pilis ramosis flocoso-tomentosis interdum pilis extensis glandulosis vestitis, in maturitate 14—15 mm longis, labia superiore rotundata, inferioris laciniis acutis in basi connatis, pedicellis 4—5 mm longis elatis; corollarum tubo 25—32 mm longo, intus nudo, labia superiore 5—7 mm alta, inferiore paulo breviore; staminibus ad fauces positis filamentis 3—4 mm longis, jugo

18—27 mm longo paulo infra medium connexco, gubernaculo 9—13 mm longo.

Peruvia: Moquegua: Carumas (rainy-green formation) 2800 m; in declivitate saxosa in monte Chachani prope Arequipa; Bolivia: prov. Larecaja: Pelechuco, 12000—13000 ped.; La Paz, 11000 ped.: Cotana, 2500 m, Taquina, Cochabamba, 2700 m; inter La Paz et Palca, 3650 m; Tunari, 3000 m; La Granja, 2600 m; Jaume, 8000 ped.; Unduavi, 8000 ped.; prope Sorata, 7500 ped.; Suri, 8000 ped.

155. **S. Rusbyi** Britton, ex Rusby in Mem. Torr. Bot. Cl. 4. 247, 1895 per specim. in Boliviae prov. La Paz in valle Yungas a Rusby (no. 2414) lectum constituta est; typum in herb. horti bot. Nov. Eborac. vidi.

Frutex elegans ramis hirtellis fere glabris gracilibus; foliorum laminis 6—10 cm longis, 3—6 cm latis, ovatis, acutis vel breviter acuminatis, in basi pulchre rotundatis, margine serrata, paginis ambobus glabris, petiolis gracilibus 3—6 cm longis elatis; floribus solitariis in verticillastris; calycibus florentibus 14 mm longis fere glabris, labiis ambobus in caudas 2,5—4 mm longas acuminatis inferioris laciniis ad basim connatis; corollarum tubo intus nudo 36—38 mm longo, labia superiore 8 mm alta, inferiore paulo longiore; staminibus ad fauces positis, filamentis 4 mm longis, jugo 25 mm longo ad medium connexo, gubernaculo 11—12 mm longo.

Bolivia: La Paz: in valle Yungas, 6000 ped.

156. **S. integrifolia** R. et P., Fl. peruv. 1, 26, t. 36, 1798 per specim. in Peruviae prov. Ancachs ad Cajatambo juxta aguas thermales Cheuchin a Dombey (no. 273) lectum constituta est; specim. certa in herb. Mus. Par., DC., Berolin. et Boiss. vidi.

Frutex pulcher intricate ramosus ramorum cortice discedente, ramulis fere glabris in sulcis puberulis; foliorum laminis 1—2,5 cm longis, 2,5—10 mm latis, anguste ovatis ellipticis vel interdum lineari-oblongis, obtusis, in basi rotundatis et ad petiolum 3—5 mm longum plus minusve angustatis, fere integris, utrimque glabris; floribus 1—3 in verticillastris bracteis ovato-acuminatis 2—3 mm longis deciduis subtentis, inter se 5—6 mm distantibus in spicas breves 3—5 cm longas dispositis; calycibus florentibus fere glabris intus hispidulis ad basim saepe flavo-hirtellis, 12—14 mm longis, in maturitate 17—18 mm longis, labiis acutis, pedicellis 4—6 mm longis elatis; corollarum flavo-coccinearum tubo 30 ad 40 mm longo cylindrato, extus flavo-hirsuto, labia superiore 5 ad 6 mm alta, inferiore breviore; staminibus ad fauces positis, 2, 5 mm longis, jugo 40 mm longo paulo supra medium connexo, gubernaculo 25 mm longo pubescente.

Peruvia: Ancachs: ad Cajatambo juxta aguas thermales Cheuchin.

32. Sect. **Brittonia.**

Frutices habitu insignes foliis plus minusve coriaceis breviter petiolatis plerumque glabris forma et magnitudine variis, ut videtur ramulorum florentium frequenter deminutis; floribus oppositis bracteis minutis caducissimis subtentis in racemis brevibus dispositis; calycum labia superiore imprimis 3-venis (rarius 5-venis) ambobus acuminatis tubum subaequantibus sat hiantibus; corollarum vel rubrarum vel coccinearum tubo tubiforme leniter arcuato superne gradatim ampliato intus nudo. labia superiore erecta, inferiore saepius breviore ut videtur deflexa: staminibus ad fauces positis e labia superiore exsertis, gubernaculo integro; styli glabri ramo postico longiore.

Plantae cubenses; species typica est *S. cubensis*.

Folia 2—7 cm lata plerumque oblonga vel ovata: pagina superior haud lucida . 158. *S. speirematoides*

Folia plerumque 1—2 cm lata saepius oblongo-elliptica; pagina superior lucida 157. *S. cubensis*

157. **S. cubensis** Britton and Wilson in Mem. Torr. Bot. Cl. 16, 99, 1920 per specim. in Cuba prov. Oriente in silvis deciduis ad radices montis Loma Mensura dicti a Shafer (no. 3766) lectum constituta est; typum in herb. horti bot. Nov. Eborac., isotypum in herb. Smithson. vidi. — *S. cristalensis* Urb. in Rep. Spec. Nov. 20, 349, 1924 per specim. in Cuba prov. Oriente in Sierra del Cristal ad rivulum in Rio Lebisa affluentem a Ekman (no. 15972) lectum constituta est; typum in herb. Berol., isotypos in herb. Stockh. et horti bot. Nov. Eborac. vidi.

Frutex altitudine ad 1 m caulibus superne vel glabris vel pilis extensis minutis sparse hispidulis; foliorum laminis coriaceis glabris forma variis saepius ellipticis vel oblongo-ellipticis interdum lanceolatis etiam anguste ovatis, 2,5—12 cm longis maximam partem 5—8 cm longis plerumque 1—2 cm latis, in apice vel acutis vel obtusis, in basi angustatis rarius subrotundatis, petiolis 2—12 mm longis elatis, marginibus subserratis interdum integris, pagina superiore subnitida, inferiore pallidiore frequenter purpurea; floribus oppositis bracteis minutis caducissimis subtentis in racemis 2—8 cm longis dispositis pedicellis gracilibus elatis; calycum florentium tubo 3—3,5 mm longo extus vel glabro vel sparse hispidulo, in maturitate paulo aucto, labiis in maturitate latitudine variis 4—5 mm longis; corollarum tubo 13—19 mm longo.

Cuba: Oriente: in silvis deciduis ad radices et in cacumine montis Loma Mensura, 680 m; Arroyo del Medio in saxosis, 450 ad 550 m; Rio Guayabo. 450—550 m. Camp La Gloria ad Sierra Moa; Sierra del Cristal ad rivulum in Rio Lebisa affluentem; Sierra de Nipe in Charrascales et Manacales ad Rio Piloto.

158. **S. speirematoides** Wr. in Sauv., Fl. Cuba 114, 1868 et in Anal. Acad. Ci. Habana 7, 53, 1870 per specim. in Cuba circa Monte Verde a Wright (no. 3657) lectum constituta est; specimina certa in herb. Gray. et Kew. vidi. — *S. scopulorum* Britt. et Wils. in Bull. Torr. Bot. Cl. 50, 47, 1923 per specim. in Cuba prov. Oriente in scopulis Regina dictis in monte Turquino a Fr. Leon (no. 11010) lectum constituta est; typum in herb. horti bot. Nov. Eborac. vidi.

Frutex altitudine ad 3 m ramulis vel pilis brevibus extensis hispidulis vel solum glandulosis sessilibus conspersis; foliorum laminis subcoriaceis forma magnitudine variis 3—15 cm longis, plerumque 5—10 cm longis, 2—7 cm latis, plerumque 2,5—5 cm latis, vel ovatis vel oblongis, in apice saepius breviter acuminatis interdum obtusis, in basi rotundato-angustatis frequenter subcordatis, marginibus crenato-serratis paginis ambobus glabris nisi ad venas hispidulis haud nitidis inferiore frequenter purpurea, petiolis 5—25 mm longis elatis; floribus oppositis bracteis parvis caducissimis subtentis in racemis brevibus dispositis; calycum florentium tubo extus pilis minutis extensis interdum glandulosis hispidulo, 6 mm longo, labiis in maturitate 4—6 mm longis; corollarum tubo 20 mm longo.

Cuba: Oriente: Monte Verde; Sierra Maestra ad latus sept. Pico Turquino, 1600—1750 m, etiam in montis cacumine, 2000 m.

33. Sect. Ekmania.

Frutices vel suffrutices elati foliis vel ovatis vel lanceolatis frequenter ellipticis modo argenteo-sericeis modo cinereis, breviter petiolatis; floribus rarius oppositis saepius 3—9 in verticillastris bracteis amplis interdum insignibus ovato-caudatis saepe molliter hirsutis deciduis vel rarius caducis subtentis, in spicis vel interruptis vel confertis sat longis vel paniculatis vel axillaribus dispositis; calycum labiis pro rata brevibus conniventibus haud hiantibus superiore plerumque 3-venis; corollarum modo coccinearum modo carnearum rarius flavarum tubo cylindrato superne paulo ampliato leniter arcuato, intus nudo, labia superiore erecta, inferiore subaequilonga ut videtur deflexa; staminibus inter tubi medium et fauces positis e labia superiore exsertis, gubernaculo integro; styli glabri rarius sparse hirtelli ramo postico saepe subnullo. Plantae Hispaniolae; species typica est *S. Tuerkheimii*.

Folia ovata vel ovato-elliptica plerumque 3 ad 5 cm longa paginis ambobus pulchre argento-sericea . . . . 165. *S. arduinervis*

Folia ovata vel lanceolata plerumque 5 ad 15 cm longa paginis superioribus glabratis, inferioribus variis vix tamen sericeis

Foliorum laminae superiore et venae subtus pilis brevibus incrassatis scabrae caeterum glabrae . . . . 164. *S. Thormanni*

Foliorum laminae superiores interdum bullulato-rugosae vix tamen scabrae

Ramuli pilis extensis rectiusculis induti . 160. *S. uncinata*

Ramuli pilis intricatis crispis interdum appressis induti

Folia plerumque ovata 5—8 cm longa

Folia in basi rotundata; paginae superiores bullulatae subnitidae . . . . 163. *S. lachnaiclada*

Folia in basi plerumque angustata; paginae superiores haud nitidae . . . . 162. *S. Ottoschulzii*

Folia plerumque elliptico-lanceolata vel ovato-lanceolata 8—12 cm longa

Calyces florentes 8—10 mm longi; corollarum tubi 14—16 mm longi . . . . . . 161. *S. foveolata*

Calyces florentes 14—18 mm longi; corollatum tubi 21—26 mm longi . . . . . 159. *S. Tuerckheimii*

159. **S. Tuerckheimii** Urb., Symb. Antill. 7, 364, 1912 per specim. in Santo Domingo prov. de la Vega prope Constanza in declivibus pinetorum a Tuerckheim (no. 2896) lectum constituta est; typum in herb. Mus. Berol., isotypos complures vidi. — *S. latibracteata* Urb. in Arkiv. Bot. 23 A, no. 11, 34, 1931 per specim. in Santo Domingo prov. de la Vega prope Constanza in pinetis a Ekman (no. 13947) lectum constituta est; typum in herb. Mus. Stockh. vidi. — *S. pinetorum* Urb. in Arkiv. Bot. 23 A, no. 11, 33, 1931 per specim. in Santo Domingo prov. de Azua in pinetis prope Majaguitas a Ekman (no. 13625) lectum constituta est; typum in herb. Mus. Stockh. vidi.

Suffrutex ut videtur ramulis superne villosulis; foliorum laminis coriaceis plerumque 8—12 cm longis vel ovato-lanceolatis vel oblongo-ellipticis in apice maximam partem obtusiusculis in basi ad petiolos 1—2 cm longos angustatis, marginibus serrulatis, pagina superiore glabra nitida, inferiore pilis minutis circum areolas dispositis cinerea itaque foveolata; floribus pedicelli 5—7 mm longis elatis 3—6 et ultra in verticillastris bracteis insignibus rubris ovato-vel rotundato-cauda-

tis hirtellis 1—2 cm diametro demum deciduis subtentis, in spicis sat confertis plus minusve paniculatis dispositis; calycibus florentibus 14—18 mm longis extus appresso-hirtellis labiis acuminatis 6—7 mm longis; corollarum carnearum tubo 21—26 mm longo.

Santo Domingo: Constanza, 1200 m in declivibus pinetis; Majaguitas, Azua in pinetis.

160. **S. uncinata** Urb., Symb. Antill. 7, 364, 1912 per specim. in Santo Domingo prov. de la Vega prope Constanza supra Valle Nuevo inter lapides Pico del Valle a Tuerckheim (no. 3435) lectum constituta est; typum in herb. Mus. Berol. vidi. — *S. subalpina* Urb. et Ekm. in Arkiv. Bot. 23A, no. 11, 32, 1931 per specim. in Santo Domingo in Cordillera Central prov. Azua ad latus austr. montis Loma Rosilla in pinetis a Ekman (no. 13671) lectum constituta est; typum in herb. Mus. Stockh. vidi.

Suffrutex altitudine ad 1 m ramulis pilis plus minusve extensis subvillosis ut videtur viscidis; foliorum laminis elliptico-lanceolatis 5—15 cm longis, 1,5—3 cm latis; ab medio utrimque angustatis, petiolis 0,5—2,5 cm longis elatis, marginibus serrulatis, pagina superiore scabra sparse hirtella, pallidiore ad venas inferiore circum areolas vel minute hispidula vel pubescente; floribus plerumque 6 in verticillastris bracteis fuscis glanduloso-hirtellis deciduis subtentis, glomerulis inter se 1—4 cm distantibus in spicis interruptis plus minusve paniculatis 15—30 cm longis dispositis; calycibus florentibus extus vel flavo- vel rubro-villosulis 12—14 mm longis, labia superiore 2.5—4 mm alta; corollarum pallide carnearum tubo 16—18 mm longo.

Suggests *S. Haenkei* of Bolivia in aspect and habit.

Santo Domingo: prope Constanza in Valle Nuevo, 2600 m, inter lapides Pico del Valle; Azua: San Juan, Lomas de la Mediania, ad rivuli marginem, 1950 m; Loma Rosilla in pinetis, 2200 m.

161. **S. foveolata** Urb. et Ekm. in Arkiv. Bot. 20A, no. 5, 47, 1926 per specim. in Haiti in Massif de la Selle, Morne Cabaio ad rupium radices a Ekman (no. 1571) lectum constituta est; typum in herb. Mus. Berol., isotypum in herb. Stockh. vidi.

Frutex altitudine ad 3 m ramulis plus minusve pubescentibus vix tomentosis; foliorum laminis elliptico-lanceolatis plerumque 8—12 cm longis, 2,5—3,5 cm latis, supra medium leniter acuminatis in apice acutis, in basi ad petiolos 1—2 cm longos angustatis etiam acuminatis, marginibus serrulatis, pagina superiore fere glabra subbullulata hirtella, inferiore cinereo-tomentella foveolata; floribus 3—6 in verticillastris bracteis pubescentibus saepius caducis subtentis, glomerulis in spicis interruptis 15 ad

20 cm longis paniculatis dispositis; calycibus florentibus 8—10 mm longis extus pubescentibus interdum subtomentosis, nullomodo lanatis saepe purpureis; corollarum (? semper) flavarum tubo 14—16 mm longo

Very closely allied to *S. Ottoschulzii* and perhaps better considered as a form of that species, or together with it, as forms of *S. lachnaiclada*.

Haiti: Massif de la Selle: Badeau, 2000 m; Morne Cabaio, 2250 m; Morne Badeau; Ganthier, Pays-Pourri, 1500—1700 m.

162. S. **Ottoschulzii** Urb. et Ekm. in Arkiv. Bot. **20** A, no. 15, 90, 1926 per specim. in Haiti in Massif du Nord, Gros-Morne, M. Bonpere, in praeruptis a Ekman (no. 4953) lectum constituta est; typum in herb. Mus. Stockh. vidi.

Frutex vel suffrutex altitudine 2—4 m ramulis sat crassis appresso-tomentosis albis; foliorum laminis anguste ovatis vel ovatis interdum ellipticis sat crassis ut videtur coriaceis plerumque 5—8 cm longis, 3—3,5 cm latis, in apice vel obtusis vel breviter acuminatis, in basi ad petiolos 0,5—1.5 cm longos angustatis, pagina superiore haud lucida pilis mollibus sparse hirtella, inferiore albo-tomentella; floribus 3—9 in verticillastris bracteis deciduis molliter hirsutis subtentis, glomerulis in spicis interruptis paniculatis saepe axillaribus 10—15 cm longis approximatis; calycibus florentibus extus densissime albolanatis 9—10 mm longis; corollarum modo carnearum modo flavidarum tubo 15—20 mm longo.

Scarcely to be differentiated from *S. lachnaiclada*, and probably confluent with it.

var. **neurocalyx** Urb. and Ekm., loc. cit. — A typica nisi calycibus extus pilis appressis pubescentibus vix differt.

Haiti: Massif du Nord: Gros Morne: Morne La Rue, 880 m; Morne Bonpère; Morne Chabre, 1125 m; Ennery, Morne Perroy, 1000 m; Presqu'île du Nord Ouest, Montagnes de Terre Neuve, Morne Descouflet, 800 m.

163. S. **lachnaiclada** Briq. in Ann. Conserv. et Jard. Bot. Genève **2**, 154, 1898 per specim. in Santo Domingo in rupestribus maritimis calcareis ad Susua a Eggers (no. 2594) lectum constituta est; typum in herb. Delessert., isotypos in herb. Mus. Berol. et Univ. Goett. vidi. — *S. bahorucona* Urb. et Ekm. in Arkiv. Bot. **22** A, no. 10, 47, 1929 per specim. in Santo Domingo prov. Barahona in Sierra de los Comisarios, Cordillera de Bahoruco a Ekman (no. 6797) lectum constituta est; typum in herb. Mus. Stockh. vidi.

Suffrutex altitudine 1—3 m ramulis sat crassis albotomentosis; foliorum laminis 5—8 cm longis, ovatis vel oblongo-ovatis,

coriaceis, in apice vel obtusis vel breviter acuminatis. in basi saepius rotundato-angustatis, petiolis 0.5—1.5 cm longis elatis. marginibus crenato-serrulatis, pagina superiore subbullata subnitida sparse pubescente, inferiore albo-tomentosa; floribus 3—6 in verticillastris bracteis villosis deciduis subtentis, glomerulis in spicis interruptis praesertim axillaribus 5—10 cm longis approximatis; calycibus florentibus 7—8 mm longis extus plus minusve villosis etiam lanatis: corollarum carnearum tubo 13 mm longo (et ultra?).

Santo Domingo: Susua. circa Puerto grande; Sierra de los Comisarios. Cord. de Bahoruco.

164. **S. Thormanni** Urb., Symb. Antill. 7, 365, 1912 per specim. in Santo Domingo prope Maniel de Ocoa a Tuerckheim (no. 3611) lectum constituta est; typum in herb. Mus. Berolin., isotypos plures vidi. — *S. oroana* Urb. et Ekm. in Ark. Bot., **23 A**, no. 11. 32, 1931 per specim. in Santo Domingo prov. de Azua in Cordillera Central prope San Juan in Arroyo de Oro ad rivulum a Ekman (no. 13547) lectum constituta est; typum in herb. Mus. Stockh. vidi.

Suffrutex ut videtur ramulis pilis brevibus incrassatis subramosis scabris; foliorum laminis coriaceis plerumque ovatis interdum oblongis, maximam partem 5—8 cm longis, in apice saepius obtusis, in basi vel rotundatis vel subcuneato-angustatis marginibus crenato-serratis, pagina superiore pilis brevibus incrassatis asperis caeterum glabris viridibus, inferiore ad venas aspera et pilis minutis cinereo-foveolatis vel (*S. oroanae*) caeterum glabra, petiolis 1—1,5 cm longis elatis; floribus 6 et ultra in verticillastris bracteis insignibus rubris rarius fusco-viridibus ovatis 1,5—4 cm longis reticulato-venulosis fere glabris tarde deciduis subtentis in spicis sat densis 15—20 cm longis in paniculis ternatis saepius dispositis; calycibus florentibus 12—13 mm longis sparse hirtellis vel hispidulis, labiis 3—4 mm longis; corollarum carnearum tubo 28 mm longo.

S. oroana presents little more than habital differences such as might be expected within the range of a species. In spite of the differences in elevational range of the two forms, I feel fairly certain of their unity.

Santo Domingo: Maniel de Ocoa, 300 m; Azua: San Juan, Arroyo del Oro, 1550 m.

165. **S. arduinervis** Urb. et Ekm. in Arkiv. Bot., **20 A**, no. 15, 89, 1926 per specim. in Haiti in Massif de la Selle, Morne de la Selle a Ekman (no. 3168 b) lectum constituta est; typum in herb. Mus. Stockh. vidi.

Suffrutex pulcher argenteo-albus insignis ramulis densissime albo-tomentellis internodiis pro rata brevibus; foliorum laminis ovatis vel ovato-ellipticis 3—5 cm longis in apice acutiusculis in basi ad petiolos 2—5 mm longos angustatis, marginibus minute serrulatis subintegris paginis ambobus dense et pulchre argenteo-sericeis, venis prominulis; floribus 3—6 in verticillastris bracteis caducis sat amplis molliter hirsutis subtentis, in spicas densas 3—6 cm longas compactis; calycibus florentibus extus densissime albo-hirsutis 10—11 mm longis, in maturitate paulo auctis; corollarum tubo 16—20 mm longo.

Haiti: Massif de la Selle: Morne Courty, 2700 m; Morne de la Selle, 2500—2680 m.

34. Sect. **Subrotundae.**

Subsect. *Subrotundae* Epl. in Rep. Spec. Nov., Beiheft 85. 123, 123, 1936. — *S. subrotunda* est species typica.

Herbae annuae foliis deltoideo-ovatis vel perennes; floribus 3—6 et ultra in verticillastris bracteis deciduis frequenter subperstatis subtentis in spicis interruptis dispositis; calycum labia superiore 5—7 venis: corollarum coccinearum tubo gradatim ampliato intus nudo; labia inferiore quam superior duplo longiore; staminibus a galea exsertis supra tubi medium ad fauces positis; styli hirtelli vel glabri ramo postico breviore.
Plantae brasilienses quarum altera late disseminata est.

Folia subtus glabrata glandulis perlucidis sessilibus conspersa . . . . 166. *S. subrotunda*
Folia subtus incano-pubescentia . . . . . 167. *S. coccinea*

166. **S. subrotunda** St. Hil. ex Benth., Lab. Gen. et Sp. 290, 1833 et in DC. Prodr. 12. 332, 1848 per specim. in Brasilia a St. Hilaire (no. 1024) lectum constituta est; typum in herb. Mus. Par. vidi. — *S. Micheliana* Briq. ex Micheli in Mém. Soc. Phys. Hist. Nat. Genève, 32, no. 10. 10. 1897 per specim. in Paraguay ad silvarum margines prope Casta-pucu inter Paraguari et Ibitimi a Balansa (no. 1156) lectum constituta est; specim. certum in herb. Mus. Par. vidi.

Herba annua altitudine 40—80 cm ramis sparse puberulis et glandulis sessilibus ornatis; foliorum laminis tenuibus subrotundis breviter acuminatis, in basi rotundato-truncatis, 2—8 cm diametro, margine crenato-truncatis, 2—8 cm diametro, margine crenato-serrata, paginis ambobis fere glabris utrimque minute sparse hirtellis subtus glandulis sessilibus perlucidis obscuris conspersis, petiolis 1—6 cm longis elatis; floribus tribus in verticillastris bracteis caducis ovato-attenuatis 4—5 mm

longis subtentis, glomerulis demum inter se 1—3 cm distantibus, in spicas interruptas laxas 15—20 cm longas dispositis; calycibus florentibus 7,5—10 mm longis extus fere glabris, in maturitate 9—11 mm longis, labia inferiore paulo longiore, pedicellis 5—6 mm longis elatis; corollarum tubo 13—22 mm longo, labia superiore 6—7 mm alta, inferiore subaequilonga; staminum filamentis 5—6 mm longis, jugo 8—13 mm longo ad medium connexo, gubernaculo 5—7 mm longo.

The type of *S. subrotunda* bears a printed label stating its place of collection as Minas Geraes. St. Hilaire's usual manuscript label is lacking, nor apparently was it present when Bentham (who carefully recorded St. Hilaire's localities) described the species. I therefore doubt the reference to Minas Geraes. The only noteworthy differences between St. Hilaire's specimen and the Paraguayan plants are the smaller leaves and somewhat longer flowers of the former.

Brasilia: ? in Rio Grande do Sul; — Paraguay: in regione fluminis Alto Parana, ad coloniam Maynthusen, 26—27° S.; ad silvarum margines prope Casta-pucu inter Paraguari et Ibitimi; ad margines silvularum prope Sapucay; — Argentina: Misiones: Napp-Cataract in Arroyo Yacy; in Arroyo Nacanguasu, Puerto Tamaren; Corpus.

167. **S. coccinea** Juss. ex Murr. in Comm. Goett. 1, 86, t. 1, 1778 per specim. hortatum constituta est: icon, non typum vidi. — *S. pseudococcinea* Jacq., Coll. 2, 302, 1786 per specim. hortatum constituta est; typum reperire non potui. — *S. rosea* Vahl, Enum., 1, 244, 1805 per specim. in India in horto missionis Tranquibariae a Röttler lectum constituta est; typum non vidi. — *S. glaucescens* Pohl, Pl. Bras. Ic. 2, t. 192, 1831 per specim. in Brasiliae prov. Goyaz ad Rio Claro a Pohl lectum constituta est; typum in herb. Mus. Vindob. vidi. — *S. ciliata* Benth., Lab. Gen. et Sp. 286, 1833 per specim. in Mexico prope Papantla a Schiede et Deppe lectum constituta est; typum in herb. Cantabr. vidi. — *S. Galeottii* Mart. in Mart. et Gal. in Bull. Acad. Brux. 11, II, 75, 1844 per specim. in Mexico prov. Vera Cruz in campis ad Xalape a Galeottii (no. 611) constituta est; typum in herb. Mus. Brux. vidi. — *S. mollissima* M. et G., op. cit. 71, 1844 per specim. in Mexico prov. Oaxaca prope Juquila del Sur a Galeottii (no. 657) lectum constituta est; typum defloratum in herb. Mus. Brux. vidi. — *S. coccinea* var. *pseudococcinea* Gray, Syn. Fl. N. Am. 21, 368, 1878 per *S. pseudococcineam* Jacq., loc. cit., constituta est. — *S. coccinea* var. *minima* Fern. in Proc. Am. Acad. 35, 551, 1900 per specim. in Mexico prov. Chiapas prope Ocuilapa a Nelson (no. 3062) lectum constituta est; typum in herb. Gray. vidi.

Herba annua altitudine 30—60 cm caulibus pilis brevibus pubescentibus et maximam partem longioribus setaceis extensis plus minusve ornatis; foliorum laminis deltoideo-ovatis 3—6 cm longis, obtusis, in basi nunc truncatis nunc cordatis, petiolis 1—3 cm longis elatis, paginis ambobus pilis brevibus cripis plus minusve pubescentibus et frequenter pilis setaceis conspersis, inferiore cinerea interdum incana, marginibus crenato-serratis; floribus 3—6 et ultra in verticillastris bracteis acuminato-ovatis frequenter subperstatis subtentis, in spicis interruptis dispositis; calycibus florentibus circiter 7 mm longis extus crispo-hirtellis et saepe superne ad basim pilis longioribus glandulosis conspersis, in maturitate paulo auctis, frequenter purpureis vel coccineis; corollarum saepius coccinearum tubo 13—17 mm longo, labia superiore 3,5—5 mm longa, inferiore duplo longiore; staminibus e galea 3—4 mm exsertis, stylo hirtello.

It is rather remarkable that a species so well marked and so stable should have acquired so extensive a synonymy. The primary basis for the recognition of *S. pseudococcinea* is the presence of long setae upon the stems and sometimes leaves in addition to a soft curling pubescence. In well marked examples this is very distinctive; yet careful scrutiny has revealed few plants, if any, in which these setae are not developed to some degree or other. *S. coccinea* var. *minima* is apparently a sun or drought form, scarcely noteworthy. The species is presumably a native of Brazil, now widely introduced or naturalized in subtropical regions of both hemispheres. In North America it occurs throughout the West Indies and the Gulf states of Mexico and the United States from Yucatan to South Carolina. In Mexico it has been collected in the states of Chiapas, Oaxaca and San Luis Potosi. The type of *S. mollissima* has lost whatever corollas may have been on it. I am reasonably certain, however, that it represents an unusually pilose form of this species, particularly since it was compared with *S. pseudococcinea* by the author.

Ubique in America calidiore.

35. Sect. **Sulcatae.**

Frutices glabrati foliis ovatis petiolatis; floribus saepius tribus in verticillastris bracteis perstatis lanceolatis subtentis in spicis interruptis laxioribus paniculatis dispositis; calycum labiis aequilongis acuminatis superiore 3-venis; corollarum caerulearum tubo 17—18 mm longo tubiformi superne gradatim ampliato ad basim sulcato-invaginato intus nudo, labia inferiore quam superior paulo breviore; staminibus e galea 7—8 mm exsertis, gubernaculo ad connexum in dentem retrorsum producto; stylo glabro.

Species una guatemalensis . . . . *S. phaenostemma*

168. **S. phaenostemma** J. D. Smith in Bot. Gaz. 23, 13, 1897 per specim. in Guatemala inter Rodeo et Malacate a Nelson (no. 3736) lectum constituta est; non typum sed isotypum in herb. Smithson. vidi.

Frutex viridis ramosissimus altitudine ad 3.5 m ramulis sparse et breviter hirtellis mox glabri; foliorum laminis 6—10 cm longis tenuibus ovatis, breviter acuminatis, in basi rotundatis, petiolis gracilibus 1—3 cm longis elatis, marginibus serratis, paginis ambobus fere glabris; floribus saepius tribus in verticillastris bracteis caducis subtentis in spicis interruptis laxioribus numerosis paniculatis 20—40 cm longis dispositis. glomerulis demum inter se 1—2 cm distantibus; calycibus florentibus 11—12 mm longis extus glabris. in maturitate paulo auctis, pedicellis gracilibus 8—10 mm longis elatis, labiis acuminatis; corollarum caerulearum tubo 17—18 mm longo, labia superiore 6—7 mm alta, inferiore paulo breviore.

Guatemala: inter Rodeo et Malacate, 450—1200 m; Las Mercedes; Quezaltenango: Columba.

36. Sect. Flexuosae.

Subsect. *Flexuosae* Epl. in Rep. Spec. Nov., Beiheft 85, 127. 1936. — Species typica est *S. calocalicina.*

Frutices vel suffrutices foliis sat amplis glabratis; calycum labia superiore 3—5—7 venis: corollarum tubo tubiformi superne gradatim ampliato, ad basim in calyce abrupte ascendenti-recurvo superne leniter arcuato, intus ad basim papillis binis ornato; staminibus patentim exsertis infra tubi medium positis. gubernaculo saepius in dentem assurgentem parvum producto; stylo plus minusve piloso interdum glabro. Plantae modo boreali-andinae modo costaricenses.

Calyces extus rubro-villosi; stamina ad tubi
  medium posita . . . . 170. *S. derasa*
Calyces extus fere glabri; stamina infra tubi
  medium posita
  Folia saepius utrimque angustata elliptica
    Plantae costaricenses . . . . 169. *S. bella*
    Plantae colombianae . . . . 171. *S. pauciserrata*
  Folia saepius ovata . . . . 172. *S. calocalicina*

169. **S. bella** Briq. in Ann. Conserv. et Jard. Bot. Genève 2, 169, 1898 per specim. in Costa Rica ad Rio Convento a Pittier (no. 10636) lectum constituta est; typum in herb. Mus. Brux., isotypos in herb. Monac., et Vindob. vidi.

Frutex ramis fere glabris internodiis 1—2,5 cm longis; foliorum laminis 10—15 cm longis, 3—5 cm latis ellipticis, utrimque leniter

acuminatis, petiolis 1—2 cm longis elatis, margine serrulata. paginis ambobus glabris pulchre viridibus; floribus 1—3 in verticillastris bracteis glabris coloratis acuminatis 1—2,5 cm longis caducis subtentis, in racemis 15—30 cm longis dispositis; calycibus florentibus 12—17 mm longis, in maturitate paulo auctis subrubentibus fere glabris; corollarum tubo 30—31 mm longo, labia superiore 18 mm alta, inferiore 14—15 mm longa; staminibus e galea 8 mm exsertis, 52 mm longis, gubernaculo infra connexum 11 mm longo.

Costa Rica: ad Rio Convento prope Buenos Aires in valle du Diqués, 800 m.

170. S. **derasa** Benth., Pl. Hartweg. 242, 1846 per specim. in Colombiae prov. El Cauca ad Popayan prope Pitayo in silvis a Hartweg (no. 1327) lectum constituta est; typum in herb. Kew., isotypos plures vidi.

Suffrutex altitudine ad 3 m ramulis glabris nisi nodis villosis; foliorum laminis 6—13 cm longis, 3—11 cm latis, saepius 8—9 cm longis, 5—6 cm latis, late ovatis, breviter acuminatis, in basi rotundatis interdum subcordatis, petiolis glabratis 3—8 cm longis elatis, margine serrata, paginis ambobus fere glabris, inferiore pallidiore; floribus 1—6 in verticillastris bracteis subrotundis acuminatis 1—2 cm longis margine valde villosa caeterum glabris deciduis subtentis, glomerulis demum inter se 1—3 cm distantibus, in spicas interruptas 15—20 cm longas villosas dispositis, calycibus florentibus 15—16 mm longis purpureo-villosis intus dense hispidis, in maturitate 18 mm longis, labiis ambobus acuminato-caudatis 7 mm longis, superiore 5- (? interdum 3-) venis, inferioris laciniis ad medium et ultra connatis, pedicellis pubescentibus villosisve 8—10 mm longis elatis; corollarum tubo 25 mm longo, intus ad basim papillis duobus prominulis ornatis superne ampliato, labia superiore 12 mm alta, inferiore subaequilonga; staminibus vel infra medium vel ad tubi medium positis, filamentis 4—5 mm longis, jugo 36—38 mm longo ad basim connexo, gubernaculo 8—11 mm longo; stylo piloso.

Colombia: El Cauca: Popayan: in Cord. central. ad Rio Piendamo, 2600—3000 m; in silvis densis ad Rio Ullucos, 2300 m; in Valle de Quintero supra Pitayo, 2800 m; prope Silvia.

171. S. **pauciserrata** Benth., Pl. Hartweg. 241, 1846 per specim. in Colombiae prov. Cundinamarca ad Bogotá in sylvis prope pagum Tena a Hartweg (no. 1325) lectum constituta est; typum in herb. Kew. vidi.

Frutex altitudine ad 1 m ramis gracilibus saepius sparse pubescentibus superne glandulosis; foliorum laminis 5—8 cm longis, 2—3,5 cm latis, ovato-ellipticis, leniter acuminatis,

in basi rotundato-angustatis, petiolis 1,5—3 cm longis pubescentibus elatis, margine pauciserrata, paginis ambobus sparse villosis inferiore saepe violacea interdum subglabris; floribus 1—3 in verticillastris bracteis lanceolatis villosis 5—6 mm longis caducis subtentis, glomerulis demum inter se 1—2 cm distantibus, in spicis interruptis 10—15 cm longis dispositis; calycibus florentibus extus sparse pubescentibus rarius subglabris 15—16 mm longis, intus hispidulis, labiis ambobus acuminato-caudatis, 6 mm longis, inferioris laciniis infra medium connatis, in maturitate non visis; corollarum tubo 35—38 mm longo, intus ad basim papillis binis ornato, labia superiore 10—11 mm alta, inferiore subaequilonga; staminibus infra tubi medium positis filamentis 5 mm longis, jugo 45—48 mm longo ad basim connexo, gubernaculo 10—12 mm longo pubescente in dentem parvum assurgentem ad connexum dilato: stylo pubescente.

Colombia: ad pagum Tena prope Bogotá; El Colegio.

172. S. **calocalicina** Briq. in Ann. Conserv. et Jard. Bot. Genève 2, 159, 1898 per specim. in Colombiae prov. Norte de Santander prope Ocana a Schlim (no. 451) lectum constituta est; typum in herb. Delessert., isotypum in herb. Mus. Par. et Bruxell. vidi.

Herba perennis altitudine ad 2 m caulibus glabris; foliorum laminis maximam partem 9—18 cm longis, 4—10 cm latis, ovatis vel ellipticis, utrimque obtusis vel in apice breviter acuminatis, in basi nunc angustatis nunc rotundatis, margine serrulata, paginis ambobus viridibus glaberrimis, inferiore saepe pulchre purpurea, petiolis 2—8 cm longis elatis; floribus in spicis interruptis fere glabris 5—36 cm longis dispositis, saepius bracteis ovato-caudatis glabris 10—20 mm longis subtentis, in maturitate glomerulis 1—3 cm inter se distantibus; calycibus florentibus glabris intus hispidulis 10—15 mm longis, in maturitate 15—18 mm longis labiis ambobus acuminatis subcaudatis 8—10 mm longis infra medium connatis, pedicellis 3—6 mm longis hispidulis elatis; corollarum tubo 20—46 mm longo, labia superiore 10 ad 13 mm alta, staminibus infra tubi medium positis filamentis 3—8 mm longis, jugo 36—47 mm longo ad basim connexo, gubernaculo 8—9 mm longo pubescente in dentem parvum obtusum obscurum assurgentem dilato: stylo pubescente.

Colombia: Santander del Norte: prope Ocana in paramos, 8000—10000 ped.; inter Ocana et Pamplona 3000 m; in valle Culaga versus Labateca 1480—1550 m; — Santander: inter El Roble et Tona in silvis. 1500—1900 m; — Antioquia: in Paramo de Sonson, Rio Palmas et Rio Dulce, 1500—1700 m; — Caldas: in dumetis prope San Jose, 1400—1800 m; ad Rio Boquia prope

Salento, 1500—1700 m; prope Santuario ad rivulum. 1300 ad 1700 m; ad silvae marginem supra Salento, 2000—2500 m.

The specimens I have cited above exhibit a very considerable range in size of flowers yet as far as I am able to determine from the available material present no very certain lines of cleavage. At the same time they differ from *S. pauciserrata* chiefly in the broader, more ovate leaves. The following specimens are practically confluent with the above.

var. **minor** Epl. in Rep. Spec. Nov., Beiheft 85. 128. 1936 per specim. in Colombiae prov. El Cauca prope Tulua a Holton (no. 482) lectum constituta est; typum in herb. horti bot. Nov. Eborac., isotypum in herb. Kew. vidi.

Foliis maximam partem 5—10 cm longis: calycibus florentibus circiter 10 mm longis, in maturitate paulo auctis: corollarum tubo quam typici graciliore 22—25 mm longo.

Colombia: El Cauca: prope Tuluao, San Isidro prope Purace. 2200—2500 m; La Gallera in valle Micay prope Rio San Joaquin, 1100—1300 m: inter El Ramal et Rio Sucio prope Popayan, 2000—2200 m: — Huila: Huila in valle Rio Paez, 1600 ad 1900 m; Neiva.

In addition I have seen specimens from Ecuador collected by Lehmann and from Peru collected by Spruce which are very similar but I hesitate to refer to them here. The plants recently collected by Williams at San Roque, San Martin. Peru, have corollas with tubes 15 mm long; otherwise, they hardly differ from the Colombian plants.

37. Sect. **Incarnatae.**

Herbae perennes saepius suffruticosae interdum frutices; foliorum laminis ovatis petiolatis sat amplis; floribus 3—6 et ultra in verticillastris bracteis deciduis subtentis in spicis speciosis nunc confertis nunc interruptis dispositis; calycum labia superiore longiore vel trimucronata vel caudata, inferioris laciniis acuminatis brevibus; corollarum coccinearum tubo anguste cylindrato, superne paulo ampliato. intus epapillatis, interdum ad basim subtus paulo supra calycem longitudinaliter invaginato, labia superiore erecta emarginata, inferiore breviore: staminibus e galea exsertis ad fauces positis; stylo glabro vel sparse piloso; gynobasis cornu ovula superante. Plantae mexicanae; species typica est *S. elegans*.

Stamina e galea 4—7 mm exserta; corollarum
  tubi ad basim longitudinaliter invaginati . 173. *S. cinnabarina*
Stamina e galea 1—3 mm exserta; corollarum
  tubi integri . . . . 174. *S. elegans*

173. **S. cinnabarina** M. et G. in Bull. Acad. Brux. 11, II, 63, 1844 per specim. in Mexico prov. Oaxaca in Cerro de San Felipe a Galeotti (no. 655) lectum constituta est; typum in herb. Mus. Brux. vidi. — *S. antennifera* Briq. in Ann. Conserv. et Jard. Bot. Genève 2, 168, 1898 per specim. in Mexico prov. Chiapas verisimiliter inter San Bartolo et Pueblo Nuevo a Linden (no. 131) lectum constituta est: typum in herb. Delessert., isotypum in herb. Kew. vidi. — *S. cinnabarina* var. *typica* Briq., op. cit. 2, 169, 1898 per specim. Galeottii constituta est. — *S. cinnabarina* var. *Pringleana* Briq., loc. cit., per specim. in Mexico prov. Oaxaca in Sierra de San Felipe a Pringle (no. 4947) lectum constituta est; typum in herb. Delessert. vidi.

Herba perennis dumetorum caulibus e caudice ascendentibus strictis altitudine ad 2 m superne appresso-hirtellis interdum viscido-glandulosis; foliorum laminis maximam partem ovatis, 5—15 cm longis saepius acuminatis, in basi rotundatis vel angustatis, petiolis gracilibus 2—5 cm longis elatis, pagina superiore glabra, inferiore sparse pubescente, marginibus serrulatis; floribus pluribus in verticillastris in spicas speciosas confertis, bracteis deciduis ovato-attenuatis puberulis 10—20 mm longis subtentis praesertim juvenilium imbricatis insignibus; calycibus florentibus cauda exclusa 3—4 mm longis in maturitate 5—6 mm longis extus vel appresso-hirtellis et glandulis sessilibus conspersis vel glanduloso-irrasis viscidis, cauda circiter 2 mm longa; corollarum tubo 15—25 mm longo subtus supra calycem 2—3 mm longitudinaliter invaginato, labia superiore 5—8 mm alta erecta; staminibus e galea 4—7 mm exsertis; stylo glabro vel sparse piloso.

Mexico: Oaxaca: Cerro de San Felipe, 2000 m: Totontepec, 2200 m: Tsapiche de Concepcion; Guerrero: Mina: Pilas, 1500 m: Chiapas: Pueblo Nuevo. — Guatemala: Volcan de Fuego in quercetis; Volcan Amay, Jalapa, 1600 m; Volcan Atitlan, Solala, 3300 m, Santa Maria de Jesus prope Antigua; Huehuetenango; Zacatepequez: Volcan de Agua, 2800 m; Cerro Quemado, Quezaltenango; San Rafael: SanCarlos, 2900 m; Buena Vista, Santa Rosa, 1800 m; San Miquel Uspantan, Quiche, 2000 m; Tecpan, Chimaltenango; Chichavac, Chimaltenango: Huehuetenango, 2100 m. — Honduras: in pinetis prope El Achote, Siguatepeque, Comayagua, 1080 ad 1500 m.

174. **S. elegans** Vahl, Enum. 1, 238 et 362, 1805 per specim. hortatum constituta est; typum non vidi. — *S. incarnata* Cav., Anal. Hist. Nat. 2, 112, 1800 per specim. in Mexico prope Quaretaro a Neé lectum constituta est; typum non vidi (non Etlinger, 1777). — ? *S. microculis* (err. typogr. pro *microcalyx*) Poir. Encycl.

6, 614, 1804. — *S. punicea* M. et G. in Bull. Acad. Brux. 11, II, 65, 1844 per specim. in Mexico prov. Vera Cruz in monte Orizaba a Galeotti (no. 685) lectum constituta est; typum in herb. Mus. Brux. vidi. — *S. microcalyx* Scheele in Linnaea 22, 589, 1849 per specim. in Mexico a Hegewisch lectum constituta est; typum non reperire potui. — *S. longiflora* Sessé et Moc., Pl. Nov. Hisp. Ed. 2. 8. 1893 per specim. in Mexico ab auctoribus lectum constituta est; specimen ex herb. horti bot. Matrit. vidi. — *S. Camertoni* Regel in Bot. Zeit. 11. 334, 1853 per specim. hort. constituta est; typum non vidi.

Herbae suffruticosae interdum frutices altitudine 1—2 m ramulis pilis extensis plus minusve glandulosis villosis; foliorum laminis saepius deltoideo-ovatis 3—6 cm longis acuminatis, in basi truncatis vel leniter cordatis rarius rotundatis vel cuneatis, paginis ambobus plus minusve sparse villosis, inferiore pallidiore, marginibus serrulatis, petiolis 1—3 cm longis elatis; floribus 3—6 in verticillastris bracteis ovato-caudatis caducis subtentis in spicis interruptis gracilibus elongatis paniculatis dispositis glomerulis inter se demum 1—2 cm distantibus: calycibus florentibus extus glanduloso-hirtellis 4—7 mm longis, in maturitate 8—9 mm longis, labia superiore saepius trimucronata rarius integra et in mucronem 1 mm longum producta; corollarum tubo 20—27 mm longo, intus infra medium hispidulo, nullomodo invaginato, labia superiore 8—11 mm alta, inferiore breviore; staminibus e galea 1—3 mm exsertis; stylo sparse piloso.

Mexico: Jalisco: Real Alto. 2500 m; Sierra de Nayarit; Michoacan: Patzcuaro; Morelia, 2100 m; Quinceo, 2800 m, Mt. Patamban, 3100—3800 m; Guerrero: Distr. Mina: Sierra Madre los Amoles; Chilpancingo, 3000—3400 m; Oaxaca: Chinantla; Cerro de San Felipe, 3100 m; Puebla: Manzanilla pr. Puebla; Huejatzingo, 2200 m; Popocatepetl; Ixtaccihuatl, ad rivulum 2300 m; Tezintlan; Morelos: Montes Las Tres Marias pr. Cuernavaca, 3000—3200 m; Sierra de Tepoxtlan, 2500 m, Zempoala, in valle del Tepeite; Mexico: Temascaltepec: Crucevo: San Nicolas; Amecameca; Montes de la Gavia, 2900 m; Serjania de Ajusco; Eslava, 2600 m; Hidalgo: Real del Monte, 2600 m; Pachuca; Vera Cruz: Orizaba, 3000 m; Quaretaro; Guanajuato; Durango: Metates ad Cueva, 2800—2900 m, in pinetis.

var. **sonorensis** Fern. in Proc. Am. Acad. 35, 550, 1900 per specimina plura constituta est; typum (Hartman no. 312) in herb. Gray. designo.

Ramulis vix glandulosis; foliorum laminis 6—13 cm longis tenuioribus subglabris in basi cuneato-angustatis; spicis

brevioribus; corollarum tubo 18—24 mm longo, labia superiore 7,5—8,5 mm alta; stylo glabro.

Gentry has the following note regarding a plant fairly typical but leaning somewhat toward var. *sonorensis*: Mexico: „Upper Sonoran. canyon, moist slope; found only a few plants struggling along with many others in or near the spring water." — Sonora: Huehuerachi, 1300 m; Rinconada Mts.; Sierra de los Alamos; — Rio Mayo: Tepopa; — Sinaloa: San Ignacio; — Chihuahua: Batopilas Sierra Charuco: Arroyo Hondo; Quicorichi, Rio Mayo.

38. Sect. **Iodophyllae.**

Frutices ut videtur pulchelli glabri foliis subtus pulchre purpureis; floribus oppositis in racemis sparsis dispositis, bracteis caducis subtentis; calycum labia superiore 5-venis; corollarum rubrarum tubo recto amplo integro intus ad basim papillis binis ornato, labia inferiore quam superior paulo breviore; staminibus in faucibus positis e galea 4—6 mm exsertis, gubernaculo integro; styli glabri ramo postico longiore.

Species una mexicana . . . . *S. iodophylla*

175. **S. iodophylla** Epling sp. nov. per spec. in Mexico prov. Vera Cruz in monte Orizaba a Botteri (no. 793) lectum constituta est: typum in herb. Kew., isotypum in herb. Univ. Cantabr. vidi.

Herba pulchra debilis in basi reclinata glabrata caulibus inter flores pilis brevibus extensis glandulosis puberulis; foliorum comptorum laminis anguste ovatis 5—8 cm longis in apice obtusiusculis vel leniter acuminatis, in basi rotundato-angustatis, petiolis 1—3 cm longis, marginibus serrulatis, paginis ambobus glaberrimis inferiore saepius pulchre rubra; floribus plerumque oppositis bracteis caducis subtentis in racemis 15—20 cm longis dispositis; calycibus florentibus 10—11 mm longis extus fere glabris rubris, labia superiore 5-venis; corollarum coccinearum tubo 27—28 mm longo intus ad basim papillis binis ornato, labia superiore 7 mm alta, inferiore subaequilonga; staminibus e galea 5 mm exserta; stylo glabro.

Mexico: Vera Cruz: Mt. Orizaba; Huatusco.

39. Sect. **Chariantha.**

Subsect. *Chariantha* Epl. in Rep. Spec. Nov., Beiheft 85, 107, 1936; species typica est *S. Orbignaei*.

Frutices vel suffrutices foliis oblongis rugosis pilis vel simplicibus vel ramosis indutis; calycum labia superiore plerumque 5—7-venis paulo longiore; corollarum coccinearum tubo sat crasso ventricoso ad basim subtus valde invaginato et intus

vel rugis vel papillis binis trans tubum extensis ornato, labia inferiore quam superior paulo longiore patente; staminibus e galea exsertis ad fauces positis; jugo ad connexum in dentem parvum saepius retrorsum producto; styli villosi ramis longioribus antico in apice rotundato. Plantae modo bolivianae modo mexicanae.

Folia pilis saepius ramosis induta: plantae bolivianae . . . . 177. *S. Orbignaei*
Folia pilis simplicibus induta; plantae mexicanae . . . . 176. *S. perlonga*

176. **S. perlonga** Fern. in Proc. Am. Acad. 35, 546, 1900 per specim. in Mexico prov. Guerrero prope Chilpancingo a Nelson (no. 2186) lectum constituta est; typum in herb. Smithson. vidi.

Frutex ramis pilis extensis praesertim inter flores plus minusve viscidis setosis; foliorum laminis oblongo-lanceolatis 10—15 cm longis supra medium longe acuminatis, acutis, in basi rotundatis, petiolis 1—2 cm longis elatis, marginibus crenato-serratis pagina superiore hirtella, bullato-rugosa, inferiore dense mollitерque incano-tomentosa; floribus 3—6 in verticillastris bracteis caducis subtentis, in spicis interruptis 10—20 cm longis dispositis, glomerulis demum inter se 1—3 cm distantibus; calycibus florentibus 13—14 mm longis extus pilis brevibus subappressis et longioribus setaceis glandulosis sat dense vestitis, labia superiore 5-venis; corollarum coccinearum tubo 17 mm longo ad basim constricto-invaginato et intus rugis binis obliquis emarginatis ornato, labia superiore 14 mm alta, inferiore 18 mm longa; staminibus e galea 3—4 mm exsertis; stylo piloso; gynobasis cornu ovula paulo superante.

Mexico: Guerrero: Chilpancingo.

177. **S. Orbignaei** Benth. in DC. Prodr. 12, 338, 1848 per specim. in Bolivia a D'Orbigny (no. 1251) lectum constituta est; typum in herb. Kew., isotypum in herb. Mus. Par. vidi. — *S. cochabambensis* Rusby in Mem. Torrey Bot. Cl. 6, 108, 1896 per specim. in Boliviae prope oppidum prov. Cochabamba a Bang (no. 1059) lectum constituta est; typum in herb. horti bot. Nov. Eborac., isotypos in herb. Kew., Gray., Smithson. et horti bot. Missouri. vidi. — *S. Kuntzeana* Briq. in Bull. Herb. Boiss. 4, 859, 1896 per specim. in Bolivia ad Parotani, a Kuntze lectum constituta est; typum in herb. Delessert., isotypos in herb. Smithson., Berolin., et horti bot. Nov. Eborac. vidi. — *S. chariantha* Briq., op. cit. 4, 861, 1896 per specim. in Bolivia prope Rio Juntas a Kuntze lectum constituta est; typum in herb. Delessert., isotypos in herb. Berolin. et horti bot. Nov. Eborac. vidi.

Suffrutex altitudine ad 1 m ramis virgatis pilis nunc simplicibus nunc ramosis pubescentibus; foliorum laminis subcoriaceis oblongis. 4—7 cm longis, 8—16 mm latis in apice acutis, in basi saepius ad petiolum 1—4 mm longum angustatis rarius subrotundatis, margine serrulata, paginis ambobus minute pubescentibus, inferiore pallidiore, ambobus cinereo-viridibus; floribus 1—3 in verticillastris bracteis ovato-acuminatis 5—6 mm longis glandulosis caducis subtentis, glomerulis demum inter se 1—4 cm distantibus in spicis interruptis strictis crispule pubescentibus 15—25 cm longis dispositis; calycibus florentibus 12—14 mm longis, extus hispido-glandulosis. in maturitate paulo auctis, labia superiore vel acuta vel obtusa inferioris laciniis leniter acuminatis in basi connatis, pedicellis 5—8 mm longis hispidulis elatis; corollarum tubo 20—24 mm longo ad basim invaginato et intus papillis binis ornato, labia superiore 14—18 mm alta, inferiore 12 ad 22 mm longa.

Bolivia: Cochabama; Parotani, 2400 mm; ad Rio Juntas, 3000 m.

40. Sect. Membranaceae.

Salvia sect. *Calosphace* subsect. *Membranaceae* Benth.. Lab. Gen. et Sp. 202, 1833 per species duas constituta est; species typica est *S. bupleuroides*.

Herbae nunc annuae exiles nunc suffruticosae foliis plerumque ovatis; verticillastris plurifloribus bracteis perstatis insignibus membranaceis reniformibus reticulato-venosis abrupte acuminatis saepius coloratis frequenter reflexis subtentis, floribus subsessilibus rarius breviter pedicellatis ut videtur deflexis; calycum labia superiore 5—9-venis, deltoidea vel obtusa vel acuta rarius caudata, inferioribus laciniis similibus saepius in maturitate fauces plus minusve claudentibus: corollarum tubo intus nunc nudo nunc papillis binis vel quatuor ornato, labia superiore pilis capitato-glandulosis marginata, inferiore (? semper) albomaculata; staminibus in galea inclusis ad fauces positis, connectivo in dentem retrorsum dilato; stylo glabro (*S. Sanctae Luciae* postice lineato-hispidulo) ramo postico attenuato, antico rotundato vel obtuso excavato; gynobasis cornu quam ovula longiore; nuculis nunc rotundatis nunc ovatis. Plantae imprimis mexicanae.

Corollarum tubi 2,5—4 mm longi intus nudi . . *Elscholtzioideae*
Corollarum tubi 5—7,5 mm longi intus ad basim
papillis binis vel quatuor ornati. . . . . . *Lophanthoideae*

Elscholtzioideae.

Herbae annuae exiles glomerulis saepius remotis; corollarum tubo intus nudo; nuculis rotundatis.

Annuae; calyces florentes 3,5—4,5 mm longi.
  Folia utrimque sparse villosa; bractea pilis circiter 1 mm longis plus minusve villosa rarius glabra.
    Capitula superiora conferta, pilis crassioribus villosa . . . . 178. *S. hyptoides*
    Capitula remota pilis mollioribus hirsuta . . . . 179. *S. lasiocephala*
  Folia fere glabra ad venas hirtella; bractea ciliata hirtella vel glabra . . . . 180. *S. galinsogifolia*
Perennes; calyces florentes 6 mm longi . . 181. *S. verecunda*

The three annual species are difficultly separable save in the habit of minutiae. The foliar pubescence of *S. hyptoides* and *S. lasiocephala* is coarser than that of *S. galinsogifolia* and evenly distributed, while *S. lasiocephala* may be readily distinguished from *S. hyptoides* by the softer, finer and denser pubescence formed especially towards the base of the calyx. Once these characteristics are used as a guide, the species may be readily recognized by variations in habit. *S. bupleuroides* and *S. galinsogifolia* scarcely differ save in the glandular hairs on the calyces of the former and its peculiar inflorescence in which several long peduncled glomerules are borne in each exil. This may be an abnormality. *S. verecunda* is intermediate in habit with *Lophanthoideae*.

178. **S. hyptoides** Mart. et Gal. in Bull. Acad. Brux. 11, II, 74, 1844 per specim. in Mexico in prov. Oaxaca a Galeotti (no. 664) lectum constituta est; typum in herb. Mus. Brux., isotypum in herb. Kew. vidi. — *S. elscholtzioides* Benth., Bot. Voy. Sulph. 152, t. 50, 1844 per specim. in Honduras Brit. prope Realejo in sinu Fonseca a Sinclair lectum constituta est; typum in herb. Kew., isotypum in herb. Univ. Calif. (Los Angeles) vidi. — *S. hyptoides* var. *subspicata* Fern. in Proc. Am. Acad. 35, 498, 1900 per specim. in Costa Rica prope San Francisco de Guadaloupe a Tonduz (no. 7228) lectum constituta est; typum in herb. Gray. vidi. — ? *S. multispicata* Rusby, Descr. New S. Am. Pl., 111, 1920 per specim. in Colombiae prov. Magdalena juxta Jiracasaca prope Santa Marta a H. H. Smith (no. 1371) lectum constituta est; typum in herb. horti Nov. Eborac. vidi.

Herba annua altitudine ad 60 cm caulibus gracilibus appresso-hirtellis internodiis 3—10 cm longis; foliorum laminis 3—6 cm longis, 2—4 cm latis, deltoideo-ovatis, acuminatis, in basi truncato-rotundatis et ad petiolos 3—4 cm longos pubescentes abrupte cuneato-angustatis, utrimque praesertim ad venas sparse villosis, margine serrata; bracteis 8—10 mm latis, eroso-denticulatis;

glomerulis demum globosis 12—15 mm latis infimis 1—10 cm distantibus supremis approximatis interdum confertis; calycibus florentibus 3,5—4.5 mm longis extus ad apices villosis in maturitate paulo auctis; corollarum tubo 2,5—3,5 mm longo, labia superiore vix 1 mm alta, inferiore 2,5—4,5 mm longa.

S. elscholtzioides is a form distinguishable from *S. hyptoides* only in the smaller corollas with tubes 2,5 mm long and the slightly smaller calyces. These difference appear to be constant however. *S. hyptoides* var. *subspicata* is an unbranched form 10—20 cm tall with crowded verticils, very possibly a drought form.

Mexico: Vera Cruz; Nayarit; Mexico: Temescaltepec; Michoacan: Cerro Azul; Jalisco: Guadalajara; Guerrero: Distr. Adama; Oaxaca: Chiapas. — Honduras; Costa Rica; Guatemala; Nicaragua; Panama; Venezuela; Colombia.

179. S. **lasiocephala** Hook. et Arn., Bot. Beechey Voy. 306, 1841 per specim. in Mexico verisimiliter prope Tepic lectum constituta est; typum in herb. Kew. vidi.

Herba annua ramosior denudata altitudine ad 50 cm caulibus gracilibus superne appresso-hirtellis infime sparse villosis, internodiis 3—10 cm longis; foliorum laminis 3—6 cm longis, 2,5—4 cm latis, deltoideo-ovatis, acuminatis, in basi truncato-rotundatis et ad petiolos 0,5—2 cm longos pubescentes abrupte cuneato-angustatis, utrimque sparse villosulis, margine serrato-crenata, bracteis 8—10 mm latis; glomerulis paucis demum globosis, infimis inter se 5—10 cm distantibus, supremis approximatis. internodio infimo 15—25 cm longo; calycibus florentibus 3,5—4 mm longis, extus praecipue ad venas inferiores molliter hirsutis, glomerulis itaque albidis, in maturitate paulo auctis; corollarum tubo 3—3.5 mm longo. labia superiore 1—1,5 mm alta, inferiore 3—3,5 mm longa.

Mexico: Sinaloa: San Ignacio; Nayarit: Tepic; Acaponeta; Jalisco: San Sebastian; La Copradia prope Yxtlan; Mexico: Temescaltepec.

180. S. **galinsogifolia** Fernald in Proc. Am. Acad. 35, 498, 1900 per specim. in Mexico prov. Chihuahua prope Hacienda San Miguel a Palmer (no. 205) lectum constituta est; typum in herb. Gray., isotypum in herb. Kew. et Smithson. vidi. — (?) *S. bupleuroides* Presl ex Benth., Lab. Gen. et Sp. 271, 1833 et in DC. Prodr. 12, 300, 1848 per specim. in Mexico a Haenke lectum constituta est; isotypum in herb. Kew. vidi.

Herba annua altitudine ad 50 cm caulibus utrimque appresso-hirtellis, internodiis 3—10 cm longis; foliorum laminis 3—6 cm longis 2,5—4 cm latis, deltoideo-ovatis, acuminatis, in basi truncato-rotundatis et ad petiolos 1—4 cm longos pubescentes

abrupte cuneato-angustatis, utrimque praesertim ad venas sparse hirtellis fere glabris, margine serrato-crenata, bracteis 8 ad 10 mm latis; glomerulis demum globosis infimis 5—15 cm inter se distantibus, internodio infimo 15—25 cm longo, supremis approximatis; calycibus florentibus 3.5 mm longis, extus praecipue ad venas inferiores molliter hirsutis, glomerulis frequenter albidis, in maturitate calycibus paulo auctis; corollarum tubo 3—3,5 mm longo, labia superiore 1—1,5 mm alta, inferiore 3,5—4 mm longa.

S. galinsogifolia differs from *S. lasiocephala* in the more lax, leafy habit and fine curled pubescence of the stems. *S. bupleuroides* is very similar and may be conspecific. The calyces of that species are glabrous, bearing short extended, somewhat glandular hairs. The inflorescence is compound in the sense that several peduncled heads arise from each axil. I have seen no specimens comparable to the type.

Gentry has the following note apropos of a specimen collected on the Rio Mayo in Sonora: „Lower and Upper Sonoran; arroyos, fields, valleys, forests. Abundant now. Widely distributed in Sonora. Vernacular: „*Cadenilla*".

Mexico: Sonora: Alamos: San Bernardo; Huehuerachi: Sinaloa: S. Ignacio; Agua Fria; Culiacan; La Noria; Durango: Sianori; Guerrero: El Calobazal; Rio de la Venta prope Acapulco.

181. **S. verecunda** Epl. ex Jones, Contrib. West. Bot. no. 18, 53, 1933 per specim. in Mexico prov. Chihuahua in montibus Sierra Madre in angustiis Guayanopa dictis a Jones lectum constituta est; typum in herb. Coll. Pomonae vidi.

Herba perennis parva verecunda caulibus hirtellis ascendentibus 20—30 cm altis ut videtur e caudice lignoso; foliorum laminis deltoideo-ovatis 2—4 cm longis, 1,5—2,5 cm latis, in apice obtusiusculis, in basi subtruncatis, petiolis 0,5 ad 1,5 cm longis elatis, marginibus crenato-serratis, paginis ambobus viridibus tamen hirtellis; glomerulis inter se 1—3 cm distantibus, bracteis viridibus ciliatis caeterum fere glabris subtentis; calycibus florentibus 6 mm longis extus ad basim minute glandulosis et pilis setaceis sparse conspersis in maturitate fere glabris; corollarum tubo 4 mm longo intus nudo, labia superiore 2,5 alta, inferiore 5,5 mm longa.

Mexico: Chihuahua: Guayanopa canyon.

Lophanthoideae.

Herbae perennes etiam frutices foliis saepius ovatis rarius lanceolatis glomerulis saepius confertis interdum in spicas cylindratas congestis; corollarum tubo intus ad basim papillis binis vel quatuor ornatos; nuculis ovatis.

Folia subsessilia petiolis 1—3 mm longis elata
Folia ovata utrimque glaberrima nitida 184. *S. nitida*
Folia lanceolata utrimque hirtella . . 191. *S. Mexiae*
Folia petiolis 0,5—8 cm longis elata
Glomerula in spicas 12—15 mm latas (corollis exclusis) congesta; bracteae plerumque 6—9 mm longae; folia in basi pulchre rotundata nullomodo angustata
Folia glabra petiolis 2—8 cm longis elata; calyces florentes 7 mm longi . . . . . 182. *S. glabra*
Folia subtus ad venas hirsuta petiolis 1 ad 3 cm longis elata; calyces florentes 5,5 mm longi . . . . 183. *S. lophanthoides*
Glomerula in spicis nunc interruptis nunc cylindratis plerumque 15 ad 25 mm diametro disposita; bracteae plerumque 10—15 mm longae; folia in basi plus minusve angustata rare rotundata
Glomerula in spicis patentim interruptis bracteis reflexis quam calyces brevioribus calyces nullomodo circumplicantibus subtentis (vide etiam infra)
Folia 3—5 cm longa viridia anguste ovata in basi rotundata utrimque sparsissime villosa. . . . . 185. *S. Langlassei*
Folia 6—8 cm longa rhomboideo-ovata in basi cuneata, pagina superiore hirtella, inferiore molliter pubescentia . . . . 186. *S. Sanctae-Luciae*
Glomerula in spicis approximata vel compacta bracteis vix reflexis calyces superantibus et circumplicantibus saepius subtentis
Glomerula in spicas cylindratas compactas 5—15 cm longas congesta; calyces maturi glabri 7—9 mm longi labiis superioribus fere truncatis circiter 1 mm longis . . . . . . 187. *S. lophantha*
Glomerula in spicas laxiores subinterruptas approximata

Calyces maturi glabrati 10—11 mm labiis circiter 2,5 mm longis . . . 188. *S. zacuapanensis*

Calyces maturi hirtelli vel glanduloso-hispiduli 7—9 mm longi labiis circiter 2 mm longis

Folia maximam partem acuminata in maturitate glabrata marginibus supra medium concavis petiolis plerumque 1—2,5 cm etiam 4,5 cm longis elata . . . . . . 189. *S. Mocinoi*

Folia maximam partem acuta vel obtusa in maturitate pubescentia marginibus convexis petiolis plerumque 0,5—1 cm longis elata . 190. *S. rubiginosa*

182. **S. glabra** M. et G. in Bull. Acad. Brux. 11, II, 68, 1844 per specim. in Mexico prov. Oaxaca in Sierra de Llano Verde a Galeotti (no. 714) lectum constituta est; typum in herb. Mus. Brux., isotypum in herb. Delessert. vidi.

Herbae ramis superne glabris hirtellis. internodiis 6—8 cm longis; foliorum laminis sat tenuibus 6—10 cm longis. 3—5 cm latis, ovatis, in basi pulchre rotundatis, petiolis glabris 2 ad 8 cm longis elatis, margine serrata, paginis ambobus glabris; floribus 6 et ultra in verticillastris bracteis 7—10 mm longis caudatis subtentis, glomerulis demum inter se 8—15 mm, in spicas interruptas 3—5 cm longas confertis; calycibus florentibus 7 mm longis, extus glabratis vel minutissime puberulis, in maturitate paulo auctis, laciniis acuminatis; corollarum tubo 6,5 mm longo, labia superiore 3 mm alta, inferiore 8 mm longa.

Mexico: Oaxaca: Sierra de Llano Verde.

183. **S. lophanthoides** Fernald in Proc. Am. Acad. 35, 499, 1900 per specim in Mexico prov. Oaxaca prope Tlapancingo a Nelson (no. 2086) lectum constituta est; typum in herb. Smithson. vidi.

Herba elata ut videtur ramis superne sparse villosulis, internodiis 8—15 cm longis; foliorum laminis 6—8 cm longis, 5—6 cm latis, rotundato-ovatis, in apice abrupte acuminatis, in basi leniter cordatis, pagina superiore glabra, inferiore ad venas molliter villosa. margine regulariter serrulata, petiolis 1—2,5 cm longis elatis: glomerulis multifloribus in spicas cylindratas 5—8 cm longas 12—15 mm latas confertis, bracteis 6—8 mm longis subtentis; calycibus florentibus 5,5 mm longis extus hirtellis in maturitate 6,5 mm longis glabratis, laciniis acuminatis; corollarum tubo 5 mm longo, labia superiore 1,5 mm alta, inferiore 4,5 mm longa.

This proposed species may very well prove conspecific with *S. glabra.* The leaves of that specimen are narrower and quite glabrous; its calyces are puberulent as are those of *S. lophanthoides* at maturity. As nearly as one may ascertain from comparison of the specimens there is little else to differentiate them.

Mexico: Oaxaca: Tlapancingo.

184. **S. nitida** Benth. in DC. Prodr. 12, 300, 1848 per *Hyptidem nitidam* M. et G., loc. cit., constituta est. — *Hyptis nitida* Mart. et Gal. in Bull. Acad. Brux. 11, II, 189, 1844 per specim. in Mexico prov. Oaxaca prope Juquila et Zacatepeque ad Mare Pacificum a Galeotti (no. 658) lectum constituta est; typum in herb. mus. Brux., isotypum in herb. Delessert. et Kew. vidi.

Herba altitudine 1,5 m caulibus erectis glabris: foliorum laminis 3—4 cm longis. 15—18 mm latis, coriaceis, anguste ovatis, acutis, in basi rotundatis. utrimque glaberrimis subnitidis, margine remote crenato-serrata. petiolis 1—3 mm longis elatis; floribus circiter 6 in verticillastris bracteis membranaceis coloratis reflexis glabris reniformibus acuminatis 18—20 mm latis inclusis et partim occultis, glomerulis remotis inter se 2—4 cm distantibus; calycibus florentibus 6 mm longis, extus pilis extensis glandulosis vestitis, in maturitate paulo auctis. labiis hiantibus 2,5—3 mm longis breviter acuminatis; corollarum caerulearum tubo 5 mm longo, intus ad basim papillis binis ornato. labia inferiore 8 mm longa, lacinia media 6 mm lata.

Mexico: Oaxaca: Juquila.

185. **S. Langlassei** Fern. in Proc. Am. Acad. 45. 417, 1910 per specim. in Mexico verisimiliter in prov. Guerrero in Sierra Madre a Langlassé (no. 805) lectum constituta est; typum in herb. Gray., isotypum in herb. Smithson. vidi.

Suffrutex volubilis ramulis villosis mox glabris; foliorum laminis ovato-lanceolatis 3—5 cm longis 15—30 mm latis, supra medium acuminatis, in apice acutis, in basi rotundatis, petiolis gracilibus 4—12 mm longis elatis, marginibus serratis, paginis ambobus sparse villosis viridibus; floribus 6—9 in verticillastris bracteis quam flores brevioribus fere glabris reflexis subtentis, pedicellis 2—4 mm longis elatis, glomerulis inter se 1,5—3 cm distantibus in spicis interruptis 8—10 cm longis dispositis; calycibus florentibus 7 mm longis extus pilis extensis capitato-glandulosis conspersis, labiis circiter 2 mm longis, in maturitate paulo auctis; corollarum tubo 5 mm longo, labia superiore 3,5 mm alta. inferiore 5,5—6 mm longa.

Mexico: Guerrero: Distr. Mina: Sierra Madre del Sur ad Perlacala.

186. **S. Sanctae Luciae** Seem., Bot. Voy. Herald, 327, 1856 per specim. in Mexico, prov. Guerrero in Sierra Madre ad vicum Sanctae Luciae a Seemann (no. 2071) lectum constituta est; typum in herb. Mus. Brit., isotypos in herb. Kew., Gray. et Univ. Calif. (Los Angeles) vidi. — *S. cladodes* Fern. in Proc. Amer. Acad. 35, 497, 1900 per specim. in Mexico prov. Nayarit prope Compostela a Nelson (no. 4171) lectum constituta est; typum in herb. Gray., isotypum in herb. Smithson. vidi.

Herba ut videtur ramis superne villosulis viscidis mox glabratis; foliorum laminis 6—8 cm longis, 2.5—3,5 cm latis, anguste rhomboideo-ovatis, in apice leniter acuminatis, in basi ad petiolos 3—12 mm longos cuneato-extenuatis, margine serrulata, pagina superiore sparse hirtella, inferiore molliter pubescente; verticillastris 4—8-floribus bracteis 8—15 mm longis subtentis, glomerulis inter se 1—2 cm distantibus in spicis interruptis laxis 8—25 cm longis saepius ramosis dispositis; calycibus florentibus 8,5—9 mm longis extus praesertim ad basim pilis extensis capitato-glandulosis, in maturitate paulo auctis, labiis hiantibus 3,5—4 mm longis, pedicellis 2—8 mm longis elatis ut videtur deflexis; corollarum tubo 6 mm longo, labia superiore 4,5 mm alta, inferiore 9 mm longa; stylo postice lineato-hispidulo.

Mexico: Nayarit: Compostela. Tepic.

187. **S. lophantha** Benth. in DC. Prodr. 12, 301, 1848 per specim. in Guatemala ad Barranca del Incensio a Skinner lectum constituta est; typum in herb. Kew., isotypum in herb. Univ. Calif. (Los Angeles) vidi.

Herba erecta caulibus sparse villosulis internodiis 3—6 cm longis; foliorum laminis 4—9 cm longis, 2,5—6 cm latis, ovatis, in apice acutis vel breviter acuminatis, in basi rotundatis et ad petiolos 1—3 cm longos pubescentes cuneato-angustatis, margine crenato-serrulata, paginis ambobus nunc subglabris nunc sparse villosis; floribus in verticillastris bracteis saepius caeruleis glabris subtentis confertis, glomerulis in spicis cylindratis compactis 5—15 cm longis congestis; calycibus florentibus 6—7,5 mm longis extus praecipue infra medium glanduloso-pubescentibus, in maturitate glabris, 7—9 mm longis, membranaceis, labia superiore 1 mm alta, fere truncata, inferioris laciniis 1,5—2 mm longis, acutis, late deltoideis; corollarum tubo 5,5 mm longo, labia superiore 3 mm alta, inferiore 7 mm longa, lacinia media 5—6 mm lata.

Guatemala: Barranca del Incensio, Barranca del Guardia del Golfo, Santa Rosa, Jalapa, Volcan de Ipala. Aceituna (Guate-

mala); — Honduras: Siguatepeque, Gracias; — Nicaragua: San Rafael del Norte.

188. **S. zacuapanensis** Brandegee in Zoë 5, 255, 1908 per specim. in Mexico prov. Vera Cruz, in Barranca de Tenampa prope Zacuapan a Purpus (no. 1932) lectum constituta est: typum in herb. Univ. Calif. (Berkeley), isotypum in herb. Field Mus. vidi.

Herba ut videtur ramulis superne crispe hirtellis mox glabris, internodiis 3—8 cm longis; foliorum laminis 2,5—5,5 cm longis, 2—3 cm latis, rhomboideo-ovatis, in apice acuminatis, in basi cuneato-angustatis petiolis 1—2 cm longis elatis, pagina superiore omnino glabra, inferiore glabrata pallidiore solum ad venas hirsuta, margine serrata; verticillastris 6—8-floribus bracteis 12—18 mm longis subtentis, glomerulis inter se 1—2 cm distantibus, in spicas cylindratas laxas ad 20 cm longas approximatis; calycibus florentibus 6,5 mm longis, ad basim pilis glandulosis extensis viscidis, in maturitate 10—11 mm longis glabratis, ciliatis, labiis circiter 2,5 mm longis, deltoideis acutis; corollarum tubo 6—7,5 mm longo, labia superiore 3 mm alta, inferiore 7 mm longa.

Mexico: Vera Cruz: Barranca de Tenampa prope Zacuapan, Consoquitla.

189. **S. Mocinoi** Benth., Lab. Gen. et Sp. 271, 1833 et in DC. Prodr. 12, 300, 1848 per specim. in Mexico a Mociño et Sessé lectum constituta est: typum in herb. horti bot. Oxon., isotypum in herb. horti bot. Matrit. etiam in herb. Boiss. vidi. — *S. saltuensis* Fernald in Proc. Am. Acad. 35, 497, 1900 per specim. in Mexico in prov. Morelos in silvis montis Tepoxtlan a Pringle (no. 8035) lectum constituta est; typum in herb. Gray. et isotypos plures vidi.

Herba suffruticosa altitudine ad 3 m ramis superne praesertim ad angulos molliter appresso-pubescentibus mox glabratis internodiis 5—10 cm longis; foliorum laminis sat tenuibus 4—9 cm longis, 2—5,5 cm latis, ovatis, in apice maximam partem acuminatis frequenter acutis, in basi rotundatis et saepius ad petiolos pubescentes 1—4,5 cm longos angustatis, marginibus crenato-serratis supra medium concavis, pagina superiore hirtella laeve, inferiore praesertim ad venas molliter pubescente demum glabrata; floribus 6—8 in verticillastris bracteis 12 ad 18 mm longis subtentis, glomerulis inter se 0,5—3 cm distantibus, in spicis saepius laxis 5—15 cm longis dispositis; calycibus florentibus 6—7 mm longis, extus appresso-hirtellis vel hispidulo-glandulosis in maturitate paulo auctis labiis circiter 2 mm longis; corollarum caerulearum tubo 5—6,5 mm longo,

labia superiore 3—3.5 mm alta. inferiore 8—10 mm longa, lacinia media 6—8 mm lata.

A specimen found by Mueller (no. 142) in Nuevo Leon may represent an outlying form of this species. The corolla tube is 4 mm long, the upper lip 2,5 mm tall and the lower 7,5 mm. The bracts are about 8—10 mm long. For the rest their is little difference. The leaves are ovate, rounded at the base.

Mexico: Temascaltepec: Cumbre Peña Blanca; Puebla: Ixtaccihuatl, 2000—3000 m; Guerrero: Minas: Sierra Madre del Sur, Petlacala, 1800—1950 m; Chilpancingo, 3000—3500 m; Michoacan: Cerro Azul prope Morelia 2400 m; Morelos: Sierra de Tepoxtlan, 2500 m; Jalisco: San Sebastian, 1425 m; Oaxaca: Tehuantepec; Guatemala: Volcan del Fuego, 1600 m, Chimaltenango: San Martin, 1850 m; San Lucas Toliman; Pinula (Guatemala); Quiche: Nebaj, 2000 m; Santa Rosa: Chiapas: Jalapa: Laguna de Ayarza 2500 m: Amatitlan, 1205 m: El Salvador: Volcan San Vicente, 1200—1500 m: San Salvador, 650—850 m: Ahuachapan, 800—1000 m.

190. **S. rubiginosa** Benth. in DC. Prodr. 12, 301, 1848 per specim. in Mexico verisimiliter in prov. Chiapas in silvis prope Pueblo Nuevo a Linden (no. 130) lectum constituta est; typum in herb. Kew. vidi. — *S. rubiginosa* var. *hebephylla* Fern. in Proc. Am. Acad. 35, 496, 1900 per specim. in Mexico prov. Chiapas a Ghiesbreght (no. 745) lectum constituta est; typum in herb. Gray. vidi.

Herba perennis suffruticosa altitudine ut videtur circiter 1 m caulibus (? semper) e caudice lignoso ascendentibus superne ramosis pilis crassioribus siccis rufis interdum leniter ramosis extenso-villosis; foliorum laminis 4—7 cm longis, 2—3 cm latis, ovatis, in apice saepius obtusiusculis nullomodo acuminatis, in basi rotundatis (raro subtruncatis) et ad petiolos plerumque 0,3—1 cm longos plus minusve abrupte cuneato-angustatis, marginibus crenato-serratis supra medium convexis, pagina superiore saepius bullulata sparse villosula inferiore pallidiore pubescente etiam subtomentosa; floribus 6—8 in verticillastris bracteis plerumque 12—15 mm latis subtentis in spicis laxis magnam partem 3—10 cm longis rare 20 cm longis dispositis; calycibus florentibus 6—7 mm longis extus vel pilis brevibus hispidulis vel longioribus subsetosis ut videtur plus minusve viscidis; corollarum tubo 5—6,5 mm longo, labia superiore 2 ad 3,5 mm alta, inferiore 5—6 mm longa.

Upon the type sheet at Kew are two collections, both conspecific, and very similar, bearing two labels but under one number (Linden no. 130). One was presumably collected in Vera Cruz

near Totutla, the other in Chiapas near Pueblo Nuevo. By reason of the notations as to flower color, I am inclined to believe the labels have been interchanged. Since the wider range of the species appears to lie in Southern Mexico, I have arbitrarily considered the locality in Chiapas as the locus classicus.

This species may most easily be distinguished from *S. Mocinoi*, which it closely resembles, by the convex, rather blunt and usually thicker leaves and, once learned, the nature of the pubescence on the stems. In *S. rubiginosa* this is coarser, often somewhat branched, covers the faces as well as the angles and is spreading, although crisped and, if anything, turns upward. In *S. Mocinoi* the pubescence on the stems is finer, tends to be retrorse and appressed and is chiefly on the angles. This is especially perceptible just below the nodes. The pubescence of the calyces varies greatly in both species. In general that of *S. Mocinoi* is finer, and, if not glandular, is appressed. That of *S. rubiginosa* is more curled, coarser or spreading and setose. It is apparently viscid. *S. Mocinoi* is apparently a taller shrub, even climbing.

Mexico: Vera Cruz: Totula; San Cristobal prope Orizaba; Tecomatla; Oaxaca: Totontepeque, 1800—2000 m; Chiapas: Pueblo Nuevo; Hacienda Montserrate; Fenix; San Sebastian; Jalisco-Tuxtla Gutierez; Siltepec: Hacienda Pinada.

191. **S. Mexiae** Epling sp. nov. per specim. in Mexico prov. Jalisco prope San Sebastian a Mexia (no. 1801) lectum constituta est: typum in herb. Univ. Calif. (Los Angeles), isotypos in herb. Univ. Calif. (Berkeley), Acad. Sci. Calif. et Smithson. vidi.

Frutex altitudine ad 3 m ramulis superne villosulis, internodiis 2—8 cm longis; foliorum laminis sessilibus vel petiolis 2—3 mm longis elatis, lanceolatis, 6—12 cm longis, 1—2 cm latis, in apice longe acuminatis acutissimis, in basi angustatis, margine subserrata, paginis ambobus hirtellis, inferiore pallidiore; glomerulis multifloris in spicas cylindratas 5—10 cm longas confertis; calycibus florentibus 7—8 mm longis extus pilis extensis glandulosis, labia superiore longiore, tubi venis costatis; corollarum tubo 6 mm longo, labia superiore caerulea 3 mm alta, inferiore albida 7 mm longa.

Mexico: Jalisco: San Sebastian, 1500 m.

41. Sect. Flocculosae.

Subsect. *Flocculosae* Epl. in Rep. Spec. Nov., Beiheft 85, 77, 1935; species typica est *S. collina*. — Subsect. *Sarmentosae* Epl., loc. cit.: species typica est *S. sarmentosa*.

Herbae perennes caulibus paucis vel pluribus e caudice lignoso ascendentibus rarius prostratis internodiis vel pilis simpli-

cibus brevibus saepius retrorsis sparse hispidulis vel pilis ramosis brevibus incanis; foliorum laminis parvis saepius 1—2 cm longis maximam partem ellipticis, frequenter ovatis rarius deltoideis, saepius obtusis, saepius integris vel obscure crenulatis, petiolis brevibus elatis; floribus (etiam 12) frequenter oppositis interdum 4—6 in verticillastris bracteis parvis caducis (*S. collinae*, *S. cyanotrophae* et *S. griseifoliae* perstatis) subtentis; calycibus extus pilis brevibus hispidulis vel brevibus ramosis vestitis rarius (*S. thymoides*) pilis extensis longioribus capitato-glandulosis ornatis, labia superiore quam inferior longiore saepius 7-venia rarius 5-venia, inferiore saepius acuminata; corollarum caerulearum (*S. Greggii* et *S. macellariae* pulchre coccinearum vel rubro-purpurearum) tubo superne ventricoso intus nudo nisi ad basim sulcis binis longitudinaliter ornato, rarissime leniter invaginato, labia inferiore quam superior sat longiore; staminibus ad fauces positis, gubernaculo ad medium in dentem retrorsum dilato; stylo saepius dorsaliter piloso, rarius utrimque piloso rarius glabro; gynobasis cornu ovula superante.

Herbae andinae et Mexicanorum sunt; species duae in Haiti incolunt.

Calyces extus pilis extensis capitato-glandulosis saepe atris viscidis patentim vestiti
  Corollarum tubi 4,5—5.5 mm longi; plantae mexicanae . . . . 198 *S. thymoides*
  Corollarum tubi 9—14 mm longi; plantae haitenses
    Corollarum tubi 9—10,5 mm longi . . 193. *S. incumbens*
    Corollarum tubi 14 mm longi . . . . 192. *S. cognata*
Calyces extus pilis parvis ramosis plus minusve incani vel brevibus acutis extensis hispiduli et subsessilibus glandulosis induti
  Calyces extus pilis ramosis plus minus incani
    Caules prostrati internodiis elongatis . 194. *S. chionophylla*
    Caules ascendentes vel erecti
      Bracteae perstatae; plantae andinae
        Foliorum margines integrae: sinus inter calycum labias 4—5 mm altus; labiae valde hiantes . . 209. *S. flocculosa*
        Foliorum margines crenulatae; sinus inter calycum labias 2—2,5 mm altus . . . . 202. *S. griseifolia*

Bracteae deciduae
Folia plerumque 1,5—3 cm lata in maturitate glabrata
Plantae andinae . . . . 200. *S. Cruikshanksii*
Plantae insulae Cedros Mexicanorum . . . . 199. *S. cedrosensis*
Folia plerumque 3—12 mm lata in maturitate incana; plantae mexicanae . . . . 195. *S. chamaedryoides*
Calyces extus pilis simplicibus extensis hispidulis et subsessilibus glandulosis induti
Bracteae caducae parvae
Folia pilis parvis ramosis sparse conspersa
Staminum juga 5 mm longa . . 196. *S. coahuilensis*
Staminum juga 9 mm longa . . 205. *S. macellaria* (vide *S. Greggii*)
Folia vel pilis brevibus extensis sparse hispidulis vel glabra rarius minutissime floccoso-arachnoidea (vide *S. macellariam*) . . . . .
Corollarum coccinearum tubo 18 ad 22 mm longi . . . . 206. *S. Greggii*
Corollarum caerulearum tubi 4,5 ad 5 mm longi
Plantae peruvianae . . . . 201. *S. sarmentosa*
Plantae mexicanae
Folia 1—3 cm longa
Corollarum tubi 15 mm longi; Nuevo Leon . . . . 207. *S. Muelleri*
Corollarum tubi 8—12 mm longi
Flores plerumque oppositi; folia integra . . . . 204. *S. lycioides*
Flores 4—6 in verticillastris; folia saepius serrulata . . . . . . 203. *S. inornata*
Folia 5—12 mm longa
Corollarum tubi 6,5—7 mm longi 197. *S. serpyllifolia*
Corollarum tubi 4,5—5,5 mm longi 198. *S. thymoides*
Bracteae perstatae; herbae colombianae 208. *S. cyanotropha*

192. **S. cognata** Urb. et Ekm. in Arkiv f. Bot. **20 A**, no. 15, 86, 1926 per specim. in Haiti. Presqu' Ile du Nord-Ouest, Montagnes de Terre-Nueve, in declivibus montis Morne Descouflet a Ekman

(no. 5048) lectum constituta est; typum in herb. Mus. Berol., isotypum in herb. Mus. Stockh. vidi.

Suffrutex intricatus ramulis pilis minutis ramosis cinereis; foliorum laminis anguste ovatis plerumque 1—1,5 cm longis, in apice vel obtusis vel acutiusculis, in basi rotundatis, petiolis 2—3 mm longis elatis, marginibus integris, paginis ambobus pilis minutis ramosis sparse conspersis ut videtur cinereis: floribus 1—3 in verticillastris bracteis caducis subtentis in racemis brevibus glandulosis ad ramulorum apices sitis; calycibus florentibus extus pilis longioribus glandulosis conspersis 10—11 mm longis; corollarum tubo 14 mm longo ad basim sulcis binis longitudinaliter ornato, labia superiore 8—8,5 mm alta.

Haiti: Massif du Nord, Gros-Morne, M. Chabre, in dumetis intricatis, 800 m; Montagues de Terre-Nueve, M. Descouflet.

193. **S. incumbens** Urb. et Ekm. in Arkiv f. Bot. 20 A, no. 15, 85, 1926 per specimen in Haiti, Ile La Tortue, in saxosis montis Morne Barranca a Ekman (no. 4311) lectum constituta est; typum in herb. Mus. Berol., isotypum in herb. Mus. Stockh. vidi.

Suffrutex intricatus altitudine circiter 1 m ramulis grandibus pilis minutis ramosis incanis; foliorum laminis ovatis subpalaeoformibus 1—2 cm longis, in apice rotundatis vel obtusis, in basi rotundato-truncatis, petiolis 2—3 mm longis elatis, marginibus integris, paginis ambobus pilis minutis ramosis tomentellis praesertim juvenilium albis; floribus oppositis bracteis caducis subtentis in racemis glandulosis brevibus ad ramulorum apices sitis; calycibus florentibus extus pilis brevibus glandulosis sparse indutis 6—7 mm longis; corollarum tubo 9—10,5 mm longo, labia superiore 6—7 mm alta.

Haiti: Ile la Tortue in cacumine Morne Barranca, 300 ad 350 m; La Vallée.

194. **S. chionophylla** Fern. in Proc. Am. Acad. 43, 64, 1907 per specim. in Mexico prov. Coahuila in angustiis Chojo Grande a Palmer (no. 368) lectum constituta est; typum in herb. Gray., isotypos in herb. Univ. Calif. (Berkeley) et Smithson. vidi.

Herba perennis caulibus prostratis vel pendentibus vel tegetiformibus verisimiliter e caudice lignoso, internodiis elongatis pilis ramosis vestitis; foliorum laminis rotundato-ovatis 5 ad 15 mm longis, integris, in basi ad petiolos 2—3 mm longos plus minusve angustatis, paginis ambobus concoloribus pallidis vel pilis ramosis parvis incanis; floribus 2—6 in verticillastris in racemis 4—6 mm longis dispositis; calycibus florentibus 5,5 mm longis. extus pilis ramosis incanis, in maturitate paulo auctis; corollarum tubo 6 mm longo, labia superiore 4 mm alta; stylo ad apicem utrimque piloso.

Mexico: Coahuila: Chojo Grande ad Saltillo.

195. **S. chamaedryoides** Cav., Icones 2. 77, t. 197, 1793 per specim. in horto e seminibus mexicanis eductum constituta est: non typum sed specimina vera et icon vidi. — *S. Chamaedrys* Willd., Enum. Hort. Berol. 1, 29. 1804 per specim. horti constituta est; typum in herb. Willd. vidi. — *S. chamaedrifolia* Andr., Bot. Rep. t. 416, 1805 per specim. horti constituta est; non typum se sed icon vidi.

Herba perennis altitudine 20—50 cm caulibus pluribus e caudice lignoso ascendentibus, internodiis supremis elongatis pilis brevibus ramosis incanis; foliorum laminis deltoideo-ellipticis vel anguste deltoideis rarius obovatis maximam partem 8—15 mm longis, rarius ad 25 mm longis, in apice obtusis, in basi saepius angustatis interdum truncatis, marginibus saepe rectiusculis subcrenatis, pagina superiore bullulata incana inferiore pallidiore ambobus pilis ramosis parvis vestitis, petiolis 1 ad 3 mm longis elatis; floribus saepius 4—6 in verticillastris rarius oppositis in racemis gracilibus 10—30 cm longis, nodis infimis inter se 2—3 cm distantibus; calycibus florentibus 7—8 mm longis extus pilis brevibus ramosis conspersis, in maturitate 9—10 mm longis: corollarum tubo 7—8 mm longo, labia superiore 4,5—5 mm alta; stylo glabro nisi dorsaliter ad apicem pilis paucis ornato.

Specimens in the Paris Herbarium sent by Cavanilles compare very well with Pringle 3170 and Pringle 6907.

Mexico: Zacatecas: La Honda; Nuevo Leon: supra Encinal versus Galeana, 2500—2600 m; San Luis Potosi: San Luis; in Sierra de San Rafael; Sierra de Catorce ad Santa Ana prope Potrero, 2700—3000 m: Hidalgo: inter Pachuca et Real del Monte; Tepeyacualos; El Salto, 2300 m; Pachuca, 2800 m; Mexico: Guadalupe.

var. **isochroma** Fern. in Proc. Am. Acad. **35**, 522, 1900 per specim. in Mexico prov. San Luis Potosi in montibus prope San Rafael a Schaffner (no. 663) lectum constituta est; typum in herb. Gray., isotypos plures vidi.

Foliis plerumque 5—7 mm longis saepius ellipticis paginis ambobus concoloribus; floribus oppositis; calycibus florentibus 5—6 cm longis; corollarum tubo 6—7 mm longo.

Apparently a form of more arid habitat; perhaps distinct.

Mexico: San Luis Potosi: Sierra de San Rafael; Sierra de San Miguelito, 2100—2300 m.

196. **S. coahuilensis** Fern. in Proc. Am. Acad. **35**, 520, 1900 per specim. in Mexico prov. Coahuila ad Saltillo a Palmer (no. 194) lectum constituta est; typum in herb. Gray. vidi.

Herba perennis altitudine 15—50 cm caulibus paucis e caudice lignoso ascendentibus, ramulis pilis brevibus nunc ramosis nunc simplicibus et extensis parvis glandulosis hispidulis; foliorum laminis plerumque 8—15 mm longis maximam partem ellipticis interdum ovatis utrimque obtusis, in basi ad petiolos 1—3 mm longos angustatis; marginibus integris, utrimque concoloribus pallidis pilis ramosis plus minusve conspersis; floribus saepius oppositis in racemis gracilibus 15—30 cm internodiis 1—3 cm longis dispositis; calycibus florentibus 8—9 mm longis in maturitate paulo auctis, extus pilis simplicibus rarius subramosis hispidulis; corollarum tubo 11 mm longo, labia superiore 4,5 mm alta; jugo 5 mm longo.

Resembles *S. chamaedryoides* var. *isochroma* in habit, but may be distinguished by the finely glandular inflorescence and usually simple hairs on the calyces. When branched, these hairs are shorter and coarser than those of *S. chamaedryoides*.

Mexico: Coahuila: Sierra de Parras; Sierra de la Paila.

197. **S. serpyllifolia** Fern. in Proc. Am. Acad. 35, 521, 1900 per specim. in Mexico prov. San Luis Potosi a Parry et Palmer (no. 751) lectum constituta est; typum in herb. Gray., isotypos plures vidi.

Herba perennis altitudine 30—60 cm caulibus verisimiliter e caudice lignoso ascendentibus, ramulis pilis retrorsis brevibus hispidulis superne plus minus glandulosis, internodiis supremis elongatis; foliorum laminis plerumque ovatis 5—12 mm longis, obtusis, integris vel subserrulatis, in basi ad petiolos graciles 2 ad 5 mm longos angustatis, paginis ambobus glabris; floribus 2—6 in verticillastris bracteis parvis caducis subtentis in racemis 10 ad 25 cm longis gracilibus inter se 1—3 cm distantibus dispositis; calycibus florentibus 5—6 mm longis extus hispidulis, in maturitate paulo auctis; corollarum tubo 6,5—7 mm longo, labia superiore 3,5 mm alta; stylo glabro.

Mexico: San Luis Potosi.

198. **S. thymoides** Benth., Lab. Gen. et Sp. 255, 1833 per specim. in Mexico a Mociño et Sessé lectum constituta est; typum verisimiliter perditum non reperire potui sed specimina vera in herb. horti bot. Matrit. etiam in herb. Boiss. vidi.

Herba perennis altitudine 30—50 cm caulibus ramosioribus pluribus e caudice lignoso ascendentibus, ramulis minutissime floccoso-incanis subarachnoideis mox glabris; foliorum laminis maximam partem 5—8 mm longis, rarius 10—12 mm longis, ellipticis, utrimque obtusis, integris, juvenilium paginis ambobus pilis minutissimis arachnoideo-farinaceis mox glabratis, petiolis 0,5—3 mm longis elatis; floribus plerumque oppositis in

racemis gracilibus 2—6 cm longis dispositis; calycibus florentibus 4,5—5,5 mm longis, extus rarius fere glabris, maximam partem pilis longioribus capitato-glandulosis saepe atris viscidis ornatis, labiis brevissimis inferiore subintegra; corollarum tubo 4.5—5.5 mm longo, labia superiore 3—3,5 mm alta; stylo ad apicem utrimque piloso.

Mexico: Puebla: Tehuacan; San Luis Tultitlanapa; Achapulco; Esperanza, 2100 m; El Riejo; Chalchicomula, 2800 m; Oaxaca: Mitla; Cerros de Nochixtlan; inter Tlaxiaco et Teposcolula; Coixtlahuaca, 2300—2500 m.

199. **S. cedrosensis** Greene in Bull. Calif. Acad. 1, IV, 212, 1885 per specim. in Mexico in insula Cedros a Greene lectum constituta est; typum (? verum) in herb. Univ. Calif. (Berkeley) vidi.

Fruticulus altitudine 15—50 cm ramulis pilis minutis ramosis cretatis opimorum internodiis frequenter elongatis exiguorum brevibus; foliorum laminis exiguorum 5—10 mm longis, opimorum 2—2.5 cm longis, omnium ovatis interdum subrotundis in apice obtusis etiam rotundatis in basi ad petiolos tenues subaequilongos rotundato-angustatis etiam truncato-subcordatis, marginibus subcrenatis, paginis ambobus pilis minutis ramosis juvenilium cretatis demum fere glabris; floribus 3—6 in verticillastris bracteis caducis subtentis in spicis interruptis pedunculatis 3 ad 20 cm longis dispositis, exiguorum glomerulis confertis opimorum inter se 1—2 cm distantibus, infimis etiam 5 cm distantibus; calycibus florentibus 7—7,5 mm longis, extus pilis minutis ramosis incanis interdum caeruleis, labia inferiore 7-venia, in maturitate paulo recurva; corollarum caerulearum tubo 8,5—9 mm longo, infra medium angustato, labia superiore 4,5—5 mm alta, inferiore duplo longiore.

Suggestive of *S. Cruikshanksii*.

Mexico: Baja California: Cedros Isl.; (?) Magdalena Bay.

200. **S. Cruikshanksii** Benth., Lab. Gen. et Sp. 261, 1833 et in DC. Prodr. 12, 312, 1848 per specim. in Peruviae prov. Lima in valle Cantae prope Obrajillo a Cruikshanks lectum constituta est; typum in herb. Kew. vidi. — *S. rhombifolia* var. B. Hooker, Bot. Misc. 235, 1831 per specim. idem constituta est. — *S. leucoclada* Benth. in DC. Prodr. 12, 314, 1848 per specim. in Peruvia prope Purruchuca a Mathews (no. 464) lectum constituta est; typum in herb. Kew., isotypum in herb. horti bot. Nov. Eborac. vidi.

Suffrutex bellus altitudine ad 80 cm caulibus ascendentibus ramosis junioribus et ramis sterilibus densissime albotomentosis mollissimis tomento ad caulis basim perstato superne deciduo; foliorum laminis 2—4,5 cm longis, 1,5—3 cm latis, late ovatis acutiusculis, in basi rotundatis, junio-

ribus pilis ramosis brevibus densissime albo-tomentosis, maturis viridibus denudatis nunc sparse floccosis nunc glabris, margine crenato-serrata, petiolis 2—8 mm longis elatis; floribus 3—6 in verticillastris bracteis ovato-acuminatis 5—8 mm longis caducissimis tomentellis subtentis, glomerulis inter se 1—3 cm distantibus; calycibus florentibus extus pilis brevibus ramosis floccoso-cinereis 6—6,5 mm longis, in maturitate paulo auctis, labia superiore 1,5 mm longa nunc submucronata nunc trimucronata, inferioris laciniis aequilongis breviter acuminatis, pedicellis 3—5 mm longis elatis; corollarum caerulearum tubo 5—5,5 mm longo leniter ventricoso intus nudo, labia superiore 4,5 mm alta, inferiore 8—10 mm longa.

Peruvia: Lima: Auchi; Obrajillo; Huamantango; in convalle fluminis Rimac, 8000 ped.; Purruchuca; San Buenaventura in declivitatibus apricis saxosis, 2700—2800 m; Canta, in declivitatibus apricis saxosis, 2700—3200 m; Obrajillo; Matucana, 8000 ped.

201. **S. sarmentosa** Epl. in Rep. Spec. Nov., Beiheft 85, 79, 1935 per specim. in Peruviae prov. Cuzco prope Ollantaytambo in declivitate aprico saxoso a Pennell (no. 13650) lectum constituta est; typum in herb. Mus. Field, isotypos in herb. Mus. Stockh., Acad. Sci. Philad., Smithson. et Gray. vidi.

Fruticulus sarmentosus ramis breviter pubescentibus; foliorum laminis oblongis etiam oblongo-lanceolatis vel oblanceolatis, 1 ad 3 cm longis, 3—8 mm latis, utrimque obtusis, petiolis 1—4 mm longis elatis, marginibus integris, paginis ambobus glabris; floribus saepius oppositis bracteis ovatis caducis 3—4 mm longis subtentis, glomerulis inter se 3—15 mm distantibus in spicis interruptis glanduloso-hispidulis 3—15 cm longis dispositis, pedicellis 3—4 mm longis elatis; calycibus florentibus 7—9 mm longis, extus sparse hirtellis plus minusve glandulosis, in maturitate paulo auctis, pedicellis 3—4 mm longis elatis; corollarum tubo 8 mm longo, labia superiore 5 mm alta, inferiore 7,5 mm longa.

Peruvia: Cuzco prope Ollantaytambo in declivitate aprico saxoso, 2900—3100 m; prope Chaspyoc, ad flumen Huarocondo; Huarao, 3200 m; Urcos, 3200 m.

202. **S. griseifolia** Epl. in Rep. Spec. Nov., Beiheft 85, 78, 1935 per specim. verisimiliter in Peruvia a Lobb lectum constituta est: typum in herb. Kew. vidi. — *S. sideritidis* Presl ex Benth., Lab. Gen. et Sp. 255, 1833 et in DC. Prodr. 12, 314, 1848 per specim. in Peruviae prov. Huanuco prope Huanuco a Haenke lectum constituta est; typum in herb. Kew. vidi (non Vahl, Enum. 1, 250, 1805).

Suffrutex ut videtur ramis subvirgatis albo-tomentellis: foliorum laminis petiolis 2—3 mm longis elatis, anguste ovatis. 2—3 cm longis, 10—12 mm latis, margine leniter crenato-serrato. pagina superiore subviridi, pubescente, inferiore dense albo-tomentella; floribus 3—6 in verticillastris bracteis reniformi-ovatis acuminatis reflexis perstatis 4—6 mm longis subtentis. glomerulis inter se 1—2 cm distantibus; calycibus florentibus 5—6 mm longis extus floccoso-tomentellis. in maturitate fere 8 mm longis, labia superiore submucronata. inferioris laciniis acuminatis ad medium connatis. pedicellis 2—3 mm longis elatis; corollarum tubo fere 6 mm longo ventricoso intus nudo. labia superiore 5 mm alta. inferiore 8 mm longa.

Peruvia: Huanuco.

203. **S. inornata** Epling sp. nov. per specim. in Mexico prov. Puebla prope Esperanza a Purpus (no. 5678) lectum constituta est; typum in herb. Univ. Calif. (Berkeley); isotypos plures vidi.

Herba perennis altitudine 30—40 cm caulibus paucis e caudice lignoso ascendentibus, ramulis retrorso-hispidulis superne plus minusve glandulosis; foliorum saepius fasciculatorum laminis nunc ellipticis nunc obovatis 1—2 cm longis, in apice vel obtusis vel acutiusculis, in basi ad petiolos 1—3 mm longos angustatis saepe fere sessilibus, margine nunc integro nunc obscure serrulato. fere glabris; floribus saepius 6 in verticillastris interdum oppositis, bracteis parvis hispidulis caducis subtentis, in spicis sat congestis hispidulis plus minusve glandulosis 5—15 cm longis dispositis; calycibus florentibus 7—11 mm longis extus hispidulis, in maturitate paulo auctis saepius caeruleis: corollarum caerulearum tubo 8—12 mm longo intus ad basim (? semper) sulcis binis longitudinaliter ornato. labia superiore 4,5—5 mm alta.

Closely allied to *S. lycioides*, differing especially in the more numerous flowers. the finer pubescence and the habit of foliage. The range in flower size of the several specimens from Esperanza is notable. Resembles *S. sarmentosa* of Peru.

Mexico: Puebla: Esperanza, 2660 m.

204. **S. lycioides** Gray in Proc. Am. Acad. 21. 408, 1886 per specim. in Mexico prov. Chihuahua in angustiis montium Sanctae Eulaliae a Pringle (no. 52) lectum constituta est; typum in herb. Gray. vidi. — *S. ramosissima* Fern. in Proc. Am. Acad. 35. 521, 1900 per specim. in Texas a Wright (no. 472 a) lectum constituta est; typum in herb. Gray. vidi.

Herba perennis altitudine 30—50 cm caulibus paucis e caudice lignoso ascendentibus, ramulis interdum fere glabris saepius sparse hispidulis superne paulo glandulosis; foliorum laminis

maximam partem oblongo-ellipticis 1—3 cm longis utrimque obtusis in basi ad petiolos 2—5 mm longos angustatis, marginibus nunc integris nunc obscure serrulatis, paginis ambabus glabris vel pallidis, pilis brevibus crassis hispidulis (rarius paucis subramosis conspersis) et saepius glanduloso-punctatis; floribus oppositis bracteis parvis caducis hispidulo-glandulosis fere glabris 5—15 cm longis dispositis; calycibus florentibus 7—7,5 mm longis fere glabris glanduloso-punctatis in maturitate paulo auctis supra medium saepius caeruleis; corollarum caerulearum tubo 10—11 mm longo, labia superiore 4—4,5 mm alta.

Texas: Culberson (Guadaloupe Mts.); Brewster (Chisos Mts.); New Mexico: Otero (Guadaloupe Mts.); Dona Ana (Organ Mts.). — Mexico: Chihuahua (Sierra de Santa Eulalia); San Luis Potosi (Sierra de Catorce).

205. S. **macellaria** Epling sp. nov. per specim. in Mexico prov. San Luis Potosi in montibus prope San Miguelito a Schaffner (no. 330, 662) lectum constituta est; typum in herb. Univ. Calif. (Los Angeles), isotypos in herb. Goett., Gray., Acad. Sci. Philad. et horti bot. Nov. Eborac. vidi.

Herba perennis odoratissima 25—50 cm alta, caulibus verisimiliter e caudice lignoso ascendentibus interdum fruticulus ramulis pilis brevibus frequenter obscure ramosis retrorsis hispidulis; foliorum laminis ovatis vel rotundato-ovatis, plerumque 6—12 mm longis, obtusis vel rotundatis, in basi ad petiolos graciles 2—3 mm longos angustatis, marginibus obscure crenulatis vel integris, paginis ambabus subglabris pilis brevibus simplicibus vel obscure ramosis scabris; floribus 1—6 in verticillastris bracteis parvis caducis subtentis in racemis gracilibus 15—25 cm longis infimis inter se 2—3 cm distantibus dispositis; calycibus florentibus 7—8 mm longis extus pilis extensis hispidulis et brevioribus glandulosis irrasis in maturitate caeruleis 9—13 mm longis; corollarum atro-caerulearum tubo 12 mm longo intus (? semper) ad basim sulcis duobus longitudinaliter ornato, labia superiore 7 mm alta; staminum jugo 8—9.5 mm longo.

This proposed species suggests strongly a hybrid between two such forms as *S. Greggii* and *S. chamaedryoides*. Two specimens collected by Pennell in Sierra de Catorce (no. 17546 and 17515) may also be of such an origin.

Mexico: San Luis Potosi: Cerro de San Miguelito; Cerro Tepetate.

206. **S. Greggii** Gray in Proc. Am. Acad. 8, 369, 1870 per specim. in Mexico prov. Coahuila ad Saltillo in angustiis prope Palomas a Gregg (no. 335) lectum constituta est; typum in herb. Gray., isotypum in herb. Acad. Sci. Philad. vidi.

Herba perennis in basi indurata altitudine 30—50 cm. caulibus paucis e caudice lignoso ascendentibus interdum frutex parvus. ramulis breviter recurvo-hispidulis irrasis superne plus minusve glandulosis; foliorum laminis maximam partem obovatis frequenter ellipticis rarius ovatis, 1—2 cm, rarius 2,5 cm longis, in apice obtusis, in basi ad petiolos 2—5 mm longos angustatis, marginibus integris, paginis ambabus subglabris praesertim ad margines sparse et minute hispidulis; floribus duobus in verticillastris bracteis parvis caducis hispidulis subtentis in racemis irrasis plus minusve glandulosis 5—15 cm longis dispositis: calycibus florentibus 11—12 mm longis, in maturitate paulo auctis supra medium saepius incarnatis extus hispidulis et glandulosis; corollarum coccinearum, interdum rubro-purpurearum tubo 18 ad 22 mm longo, intus ad basim sulcis binis longitudinaliter ornato, labia superiore 8—10 mm alta.

Pennell's specimen (no. 17549) collected in San Luis Potosi has purple corollas („hyacinth to mulberry purple“) and blue calyces. It seems no different otherwise, but may be of hybrid nature as suggested under *S. macellaria*.

Texas: Pecos; Brewster; Nuevo Leon: in collibus ad „Pabllo“ versus Pueblo Galeana in pineto-quercetis, 2500—2600 m. — Mexico: Coahuila: Saltillo, 1600 m; Palomas ad Saltillo; Sierra de Parras; Hacienda Guadaloupe, Lo Cuchilla, 1500—1700 m; Durango: Tepehuanes; Santiago Papasquiaro; Inde, 2000 m; San Luis Potosi: Sierra de Catorce; Santa Ana supra Potrero; Charcas; Zacatecas: Concepcion del Oro, 2300—2600 m; in calcareis ad Puerta Almagre.

207. S. **Muelleri** Epling sp. nov. per specim. in Mexico prov. Nuevo Leon in montibus prope Monterrey ad Puerta a Mueller (no. 145) lectum constituta est; typum in herb. Mus. Field. vidi.

Herba perennis decora in basi ramosa altitudine 40—60 cm, caulibus gracilibus pilis brevibus extensis glandulosis et longioribus sparse hispidulis; foliorum laminis ovatis, 2—3 cm longis, in apice rotundatis, in basi ad petiolos graciles 0.5—1,5 cm longos late cuneato-angustatis. marginibus crenatis, paginis ambabus sparse hispidulis; floribus paucis tribus in verticillastris bracteis caducis subtentis in spicis interruptis laxis 15—25 cm longis dispositis, glomerulis inter se 2—5 cm distantibus; calycibus florentibus sparse glanduloso-hispidulis 9 mm longis; corollarum caerulearum tubo 15 mm longo, superne ventricoso, labia superiore 5,5—6 mm alta. inferiore duplo longiore.

Mexico: Nuevo Leon: in montibus ad Puerta.

208. **S. cyanotropha** Epl. in Rep. Spec. Nov., Beiheft 85, 78, 1935 per specim. in Colombiae prov. Santander del Norte ad Ocana prope Aguchica a Schlim (no. 953) lectum constituta est: typum in herb. Mus. Brux., isotypos in herb. Kew. et Par. et Delessert. vidi.

Suffrutex altitudine ad 2 m, ramis junioribus pilis ramosis vestititis demum glabratis; foliorum laminis ovatis interdum anguste ovatis, in apice acutis vel acuminatis, in basi ad petiolos 3—6 mm longos frequenter obscuros subnullos angustatis, margine serrulata, paginis ambobus juvenilium pilis ramosis cinereis etiam albidis demum fere glabris; floribus 3—6 in verticillastris bracteis cyaneis ovato-lanceolatis demum deciduis 5—20 mm longis subtentis glomerulis inter se 0,5—1 cm distantibus, in spicas interruptas villosas 6—15 cm longis confertis; calycibus florentibus extus hirsutis pilis extensis 6—7,5 mm longis, in maturitate 8,5—9 mm longis cyaneis, labiis acuminatis aequilongis; corollarum caerulearum vel violacearum tubo 6—7 mm longo leniter ventricoso intus nudo, labia superiore 4—4,5 mm alta, inferiore 7 mm diametro.

Colombia: Santander del Norte: Ocana prope Santa Maria. 4000 ped.; Agua Chica; Ocana, in declivitatibus apertis aridis ad vias, 4000—6000 ped.

209. **S. flocculosa** Benth. in DC. Prodr. 12, 314, 1848 per specim. in Ecuador prov. Chimborazo inter Lucan et Guano prope Riobamba a Hartweg (no. 1347) lectum constituta est: typum in herb. Kew., isotypos plures vidi. — *S. collina* Kunth in Humboldt et Bonpland, Voy., Nov. Gen. et Sp. 2, 288, 1817 per specim. in Ecuador in siccis prope Riobamba Nueva a Humboldt et Bonpland (no. 3192) lectum constituta est; typum in herb. Mus. Par., isotypum in herb. Univ. Calif. (Los Angeles) vidi (non Salisb. Prodr. 73, 1796). — *S. spicata* Willd. ex A. Dietr., Sp. Pl., 1, 277, 1831 per specim. Bonplandianum (no. 3192) in herb. Willd. constituta est: typum in herb. Willd. vidi (non Schultes, Mant. 1, 202, 1822).

Suffrutex ramosus altitudine 1 m et ultra ramis ascendentibus pilis brevibus ramosis floccoso-incanis; foliorum laminis 2—3 cm longis, 6—15 mm latis, nunc oblongo-lanceolatis, in apice acutiusculis, in basi rotundatis, petiolis 2—4 mm longis elatis, margine integro, paginis pulchre bicoloribus, superiore viridi fere glabra, inferiore pilis brevibus ramosis dense albo-tomentella; floribus circiter 6 in verticillastris bracteis perstatis lineari-lanceolatis 8—15 mm longis acutis extus pubescentibus intus glabris subtentis, glomerulis inter se 1—3 cm distantibus in spicis interruptis 8—20 cm longis dispositis; calycibus florentibus 6—8 mm longis,

extus floccoso-pubescentibus in maturitate 8—10 mm longis, labia superiore 5—6 mm alta recurva erecta hiante ovata. inferioris acutis aequilongis. pedicellis 1—2 mm longis elatis; corollarum pulchre violacearum tubo 4—5 mm longo. ventricoso, intus nudo. labia superiore 4 mm alta, inferiore 8—9 mm longa.

Ecuador: inter Lucan et Guano juxta Riobamba prope Quito; ad Riobamba. 2800 m; ad flumen Chambo.

42. Sect. Tenuistachya.

Herbae ut videtur perennes caulibus modo elongatis prostratis radicantibus modo brevibus et foliis in basi congestis; foliorum laminis vel ovalibus vel oblongis petiolis subaequilongis elatis; floribus maximam partem in spicis interruptis tenuibus longe pedunculatis plus minusve scapiformibus dispositis in bractearum parvarum perstatarum axillis positis: calycum fere glabrorum labia superiore 3-venis obtusis: corollarum caerulearum tubo labiam superiorem longe pilosam subaequante vel breviore intus nudo infundibuliformi, labia inferiore lata rotundata patente quam tubus duplo longiore; staminibus ad fauces positis in galea inclusis; stylo ad apicem piloso, ramo postico breviore. Herbae haitenses; *S. Cabonii* est species typica.

Folia omnino in caulis brevissimi basi conferta . . . . 211. *S. primulaeformis*
Folia ad caulem elongatum prostratum sat remote partita . . . . 210. *S. Cabonii*

210. **S. Cabonii** Urb., Symb. Antill. 7, 361, 1912 per specim. in Haiti in Valle du Bras Gauche de la Grand Anse a Christ (no. 2210b) lectum constituta est; typum in herb. Mus. Berol. vidi.

Herba ut videtur perennis procumbens caulibus in basi prostratis radicantibus utrimque pilis appressis patentim hirsutis 30—50 cm longis; foliorum laminis ovalibus 5—8 cm longis, in apice obtusissimis interdum rotundatis, in basi cordatis. petiolis pilis appressis hirsutis 2—8 cm longis elatis, marginibus sat regulariter crenato-serratis. pagina superiore pilis crassioribus anguineis sparse conspersa caeterum glabra, inferiore pallidiore ad venas pilis gracilibus subappresso-hirsutis; floribus plerumque tribus in bractearum perstatarum parvarum axillis in spicis interruptis longe pedunculatis in toto 15—30 cm longis minute hirtellis dispositis, glomerulis demum inter se 1—1,5 cm distantibus; calycibus florentibus fere glabris sparsissime hirtellis 4 mm longis; corollarum tubo 3,5 mm longo, labia superiore 5 mm alta, inferiore 10 mm diametro.

Haiti: Massif de la Hotte, Morne Citadelle, 1000 m, inter Source Cahouane et La Source Chaude, 1150 m; Vallée du Bras Gauche de la Grande Anse, 100—150 m.

211. **S. primulaeformis** Epling sp. nov. per specim. in Haiti in Massif de la Hotte, in parte media St. Louis du Sud, Bonnet-Carre, in calcareis a Ekman (no. 9230) lectum constituta est; typum in herb. Mus. Stockh. vidi.

Herba ut videtur perennis foliorum in caudice parvo congestorum laminis oblongis, 4—7 cm longis, in apice saepius rotundatis, in basi rotundato-truncatis vix cordatis, rarius angustatis, marginibus irregulariter sinuato-dentatis, paginis ambabus pilis crassiusculis sanguineis sparse villosis, petiolis 2 ad 8 cm longis villosioribus elatis; floribus saepius tribus in bractearum parvarum perstatarum axillis in spicis interruptis scapiformibus longe pedunculatis in toto 30—35 cm longis superne minutissime glandulosis dispositis; calycibus florentibus sparsissime hispidulis vix 4 mm longis; corollarum tubo 3—3,5 mm longo, labia superiore 3,5 mm alta, inferiore 7 mm diametro.

Haiti: Massif de la Hotte, Bonnet-Carre in calcareis, 1150 m.

43. Sect. **Scorodonia.**

Frutices interdum subarborescentes, rarius herbae perennes pilis simplicibus vel ramosis vestiti inter flores saepe glandulosi; foliorum laminis plerumque deltoideo-ovatis, rarius deltoideo-oblongis interdum ovatis, rarius oblongo-lanceolatis, pagina superiore saepius bullato-rugosa viridi, inferiore cinerea vel incana; floribus maximam partem 3—6 in verticillastris bracteis deciduis vel caducis, rarius subperstatis subtentis in spicis sat confertis interdum interruptis dispositis; calycum labia superiore 5—7 venis quam inferior saepius longiore ambobus brevioribus ore itaque frequenter subtruncato; corollarum verisimiliter pallide caerulearum vel albidarum tubo sat ventricoso intus ad basim saepius rugis binis obliquis ornato rarius nudo, labia superiore breviore stamina occlusa; staminum gubernaculo ad connexum in dentem retrorsum producto; stylo hirtello; gynobasis cornu ovula saepius subaequante. Species typica est *S. mellisodora*. Plantae imprimis mexicanae rarius guatemalenses.

A group of closely related forms difficult to distinguish save on the summation of minutiae in habit, yet the range both in structure and in distribution is such as to suggest the present treatment.

Ramuli superne nisi inter flores pilis ramosis
(et frequenter simplicibus) vestiti
Foliorum laminae maximam partem 1—2 cm
(rarius 3 cm) longae

Corollarum tubi 3,5—4,5 mm longi; petioli plerumque 2—6 mm longi . . . . . 216. *S. ramosa*

Corollarum tubi 5,5—8 mm longi; petioli plerumque 0,5—1 cm longi. . . . . . 217. *S. variana*

Foliorum laminae maximam partem 4—6 cm longae, interdum 2,5—3 cm longae . . 218. *S. melissodora*

Ramuli superne pilis simplicibus vel extentis glandulosis vel curvis sub appressis vestiti

Corollarum tubi 4—5,5 mm longi; folia glabrata pilis brevibus appressis eglandulosis sparse hirtella

Folia magnam partem 1—5 cm longa

Petioli 5—10 mm longi: foliorum laminae plerumque 3—5 cm longae 212. *S. breviflora*

Petioli 1—3 mm longi; foliorum laminae plerumque 1,5—2 cm longae . . . . 222. *S. paupercula*

Folia magnam partem 12—15 cm longa . 223. *S. occidua*

Corollarum tubi 6—9 mm longi; folia pilis glandulosis sat viscidis vel eglandulosis appressis vestiti

Ramuli utrimque pilis solum extensis glandulosis plus minusve vestiti; corollarum tubi intus ad basim rugis binis ornati (vide etiam *S. melissodoram*)

Calyces florentes 6—6,5 mm longi extus viscido-hirsuti; corollarum tubi 6,5 ad 7 mm longi

Plantae prov. Nayarit . . . . 221. *S. tepicensis*

Plantae prov. Sinaloa . . . . 220. *S. aequidistans*

Calyces florentes 5—6 mm longi extus glanduloso-hispiduli; corollarum tubi 7—8,5 mm longi . . . . . . 219. *S. rupicola*

Ramuli nisi inter flores eglandulosi

Corollarum tubi intus nudi (? rarius rugis binis ornati); plantae mexicanae

Calyces minute glandulosi; foliis subtus densissime albo-tomentella cretata. 215. *S. pannosa*

Calyces incano-villosi; folia subtus incano-tomentosa . . . . 214. *S. Keerlii*

Corollarum tubi intus ad basim papillis binis ornati; plantae guatemalenses foliis ovatis . . . . 213. *S. reducta*

212. S. **breviflora** Moc. et Sessé ex Benth., Lab. Gen. et Sp. 274, 1833 et in DC. Prodr. 12. 315, 1848 per specim. in Mexico a Mociño et Sessé lectum constituta est; typum olim in herb. Lambert., hodie in herb. horti bot. Oxon. et isotypum in herb. horti bot Matrit. vidi. — *S. Nelsonii* Fern. in Proc. Am. Acad. 35, 527, 1900 per specim. in Mexico prov. Puebla inter Acatlan et Piaxtla a Nelson (no. 2005) lectum constituta est; typum in herb. Smithson. vidi. — *S. albicans* Fern. l. c. 36. 501, 1901 per specim. in Mexico prov. Guerrero prope Iguala a Pringle (no. 8430) lectum constituta est; typum in herb. Gray., isotypos plures vidi.

Frutex altitudine ad 5 m ramulis superne pilis parvis simplicibus tomentellis demum glabris; foliorum laminis ovatis plerumque 3—5 cm longis, leniter acuminatis vel obtusis in basi rotundato-angustatis cuneatis, petiolis tomentellis 0,5—1 cm longis elatis, marginibus crenulatis, paginis ambabus pilis minutis appressis praesertim ad venas sparse hirtellis nullomodo albidis; floribus circiter 6 in verticillastris bracteis subrotundatis albotomentellis tarde deciduis subtentis in spicas densas plures albicantes 5—8 cm longas confertis; calycibus florentibus pilis simplicibus appressis dense albo-tomentellis 4,5—7,5 mm longis; corollarum tubo 4—5,5 mm longo intus ad basim rugis binis ornato, labia superiore 4,5—5,5 mm alta.

There is little to distinguish *S. Nelsonii* from *S. albicans* unless it be the smaller flowers of the former. In this respect *S. Nelsonii* is similar to Haenke's plant, while Pringle's is very like that of Mociño and Sessé.

Mexico: Morelos: in calcareis prope Yautepec et Jojutla, 1150—1300 m: Puebla: inter Acatlan et Piaxtla; Guerrero: Taxco.

213. S. **reducta** Epling sp. nov. per specim. in Guatemala prope San Carlos Sija a Shannon (no. 260) lectum constituta est: typum in herb. Smithson. vidi.

Herba perennis ut videtur (vel frutex) ramulis pilis simplicibus sparse hirtellis nullomodo glandulosis; foliorum laminis ovatis 6—10 cm longis in apice acuminatis, in basi subcordatis, marginibus sat convexis crenato-serratis, pagina superiore sparse hirtella, inferiore sparse molliter pubescente, petiolis 1,5—4 cm longis, elatis; floribus 6 et ultra in verticillastris bracteis caducis subtentis in spicis compactis villosis 5 cm longis dispositis; calycibus florentibus extus villosis 3,5 mm longis, in maturitate vix 5 mm longis; corollarum tubo 6,5—7 mm longo, intus ad basim papillis binis ornato, labia superiore 4—4,5 mm alta: stylo fere glabro dorsaliter sparse hirtello.

Guatemala: Totonicapam: San Carlos Sija, 3000 m.

214. **S. Keerlii** Benth., Lab. Gen. et Sp. 263. 1833 et in DC. Prodr. 12. 316. 1848 per specim. in Mexico a Keerl lectum constituta est: typum in herb. Kew., isotypum in herb. Univ. Calif. (Los Angeles) vidi.

Frutex altitudine ad 3 m ramulis superne pilis simplicibus pubescentibus subvillosis mox glabratis; foliorum laminis maximam partem 2—5 cm longis, deltoideo-ovatis, in apice obtusis vel acutiusculis, in basi saepius truncato-subcordatis rarius subrotundatis petiolis gracilibus 0.5—2 cm longis elatis, marginibus crenulatis saepius rectis, pagina superiore bullulato-rugosissima hirtella, inferiore incano-tomentosa; floribus 3—6 et ultra in verticillastris bracteis caducis subtentis glomerulis approximatis in spicis 5—10 cm longis sat densis incano-villosis confertis; calycibus florentibus 5—6 mm longis extus incano-villosis; corollarum tubo 6—8 mm longo, ad basim plus minusve constricto superne sat ventricoso intus nudo, labia superiore 5.5—6 m alta.

Mexico: Durango: Sandia, 2300 m: San Luis Potosi: Minas de San Rafael: San Jose Pass; Las Cañoas, 1100—1200 m; Sierra de Catorce, 2200—2300 m; Santa Ana supra Potrero, 2700 ad 2800 m; Estacion de Catorce; Hidalgo: Regla; Sierra de Pachuca. 3000 m; Metapcc, 2300 m; Tula, 2200 m; Mineral del Monte.

215. **S. pannosa** Fern. in Proc. Am. Acad. 40, 54, 1905 per specim. in Mexico prov. Puebla in collibus calcareis prope Tehuacan a Pringle (no. 8593) lectum constituta est; typum in herb. Gray., isotypos plures vidi. — ? *S. Gonzalezii* Fern. l. c. 35, 524, 1900 per specim. in Oaxaca prope El Parian (Etla) a Gonzalez et Conzatti (no. 903) lectum constituta est; typum in herb. Gray. vidi.

Herba venusta perennis altitudine 40—80 cm et ultra caulibus paucis gracilibus pilis simplicibus minutis hirtellis superne inter flores glanduloso-puberulis; foliorum laminis deltoideo-ovatis interdum oblongo-deltoideis plerumque 3—5 cm longis, 1—3 cm latis, in apice obtusis vel rotundatis in basi truncato-subcordatis, petiolis gracilibus 1—3 cm longis elatis, marginibus serrulatis maximam partem rectis, pagina superiore bullulato-rugosa viride sparse hirtella, inferiore densissime albo-tomentella cretata: floribus 3—6 in verticillastris bracteis caducis subtentis glomerulis inter se 1—5 cm distantibus in spicis interruptis 10—20 cm longis dispositis: calycibus florentibus extus minute glanduloso-hispidulis 6—7.5 mm longis: corollarum tubo intus nudo 8—9 mm longo, labia superiore 3.5—5 mm alta.

Mexico: Puebla: Coxcatlan: Cerro de Santa Lucia in glareosis; in calcareis prope Tehuacan, 1800 m; Cerro del Gavilan; San Luis Tultitlanapa; ? Oaxaca: El Parian.

216. **S. ramosa** Brandegee in Zoë 5, 255, 1908 per specim. in Mexico prov. Puebla in Cerro Mazize a Purpus (no. 2578) lectum constituta est: typum in herb. Univ. Calif. (Berkeley) vidi.

Frutex ramosus ramulis pilis minutis ramosis incano-tomentellis interdum inter flores extensis brevibus glandulosis viscidis; foliorum laminis deltoideo-ovatis vel oblongo-ovatis 1—3 cm longis, in apice obtusis, in basi rotundatis vel truncatis, marginibus crenulatis, pagina superiore bullulato-rugosissima pilis minutis ramosis sparse conspersa, inferiore pilis minute incano-tomentellis, petiolis 2—6 mm longis incanis subtentis: floribus 3—6 in verticillastris bracteis caducis subtentis, glomerulis approximatis demum 5—10 mm inter se distantibus in spicis interruptis interdum moniliformibus 5—20 cm longis dispositis: calycibus florentibus 3,5—4,5 mm longis extus vel pilis ramosis incanis vel extensis glandulosis vestitis: corollarum tubo 3,5 ad 4,5 mm longo, intus ad basin rugis binis ornato, labia superiore 2,5—3 mm alta.

In its typical form *S. ramosa* is characterized by branching hairs throughout. These hairs differ in some degree from those of *S. melissodora* in general aspect as well as size. With this form I have also associated similar forms which are glandular in the inflorescence and calyces. In habit the plant is very similar to *S. rupicola* but with smaller flowers, particularly corollas, and different pubescence. It may be added that Purpus' collection, no. 4165, is made up of both glandular and branched forms, otherwise indistinguishable. The species is scarcely to be distinguished from *S. melissodora* save in the smaller leaves, smaller flowers and finer pubescence.

Mexico: Puebla: Barranca de Tlaculosto: San Luis Tultitlanapa; Coxcatlan, 2600 m: Tlacuisloltepec: Oaxaca: Cuicatlan, Cuesta Quiolepec, 1400 m; Cerro San Antonio, 1900 m.

217. **S. variana** Epling sp. nov. per specim. in Mexico prov. Puebla prope San Luis Tultitlanapa a Purpus (no. 3288) lectum constituta est; typum in herb. Univ. Calif. (Berkeley), isotypos in herb. Smithson. et Mus. Field.

Frutex venustus ramosus ramulis pilis minutis ramosis cinereo-tomentellis demum glabratis; foliorum laminis plerumque 2—3 cm longis, deltoideo-ovatis, in apice obtusis, in basi truncato-rotundatis, marginibus crenulatis, pagina superiore bullulato-rugosissima viridi pilis ramosis minutis conspersa, inferiore similibus densissime albo-tomentella cretata, petiolis 0,5—1 cm longis elatis; floribus 3—6 in verticillastris bracteis caducis subtentis, glomerulis approximatis inferioribus 1—1.5 cm inter se distantibus in spicis 5—10 cm longis dispositis; calycibus florentibus

6—6,5 mm longis extus pilis ramosis saepius purpureis tomentellis; corollarum tubo 5,5—8 mm longo, intus ad basim rugis binis ornato, labia superiore 3,5—5.5 mm alta.

This species was referred by Brandegee to *S. lantanaefolia*. Since the type of that species is fragmentary and without corollas, the resemblance is close.

Mexico: Puebla: Cerro de Corral de Piedra. 2600—3000 m; San Luis Tultitlanapa.

218. **S. melissodora** Lag., Gen. et Sp. 2, 1816 per specim. cultum constituta est; specim. verum in herb. Delessert. vidi. — *S. scorodoniaefolia* Poir., Encycl. Suppl. 5, 46, 1817 per specim. cultum constituta est; specim. verum in herb. horti bot. Par. vidi. — *S. scorodonia* Benth., Lab. Gen. et Sp. 264, 1833 (err. typogr.). — *S. microphylla* Sessé et Moc., Fl. Mex. ed. 2. 9, 1894; specimina ex herb. horti Matrit. vidi. — *S. scorodoniaefolia* var. *crenaea* Fern. in Proc. Am. Acad. **35**, 524, 1900 per specim. in Mexico prope Aguas Calientes a Hartweg (no. 164) lectum constituta est; typum in herb. Gray., isotypos in herb. Kew. et Univ. Calif. (Los Angeles) vidi. — *S. Dugesii* Fern., l. c. **36**, 500, 1901 per specim. in Mexico prope Guanajuato a Duges lectum constituta est; typum in herb. Gray. vidi.

Frutex altitudine ad 2 m ramulis maximam partem pilis ramosis flocculoso-tomentosis rarius glabratis frequenter inter flores pilis extensis glandulosis viscidis; foliorum laminis plerumque 4—6 cm longis interdum brevioribus saepius oblongo-ovatis rarius deltoideo-ovatis, in apice obtusis vel acutiusculis, in basi saepius rotundatis, rarius truncatis, petiolis saepius tomentosis 0,5—2 cm longis elatis, pagina superiore viridi bullato-rugosissima hirtella, inferiore pilis plus minusve ramosis et simplicibus tomentosis, marginibus irregulatiter crenulatis plerumque convexis; floribus 3—6 et ultra in verticillastris bracteis caducis subtentis, glomerulis approximatis in spicis 5—12 cm longis interdum viscidis dispositis: calycibus florentibus (5—) 6—7 mm longis extus pilis vel ramosis vel simplicibus extensis glandulosis vestitis: corollarum tubo 6—7 mm longo, intus ad basim rugis binis obliquis ornato, labia superiore 4—6 mm alta.

This species exhibits two forms: one with glandular simple hairs, the other with eglandular branched hairs.

Both occur together at Guadaloupe, D. F., and in fact are to be found under one number: Pringle 8744. There is little, save the differences in pubescence, to distinguish them. *S. melissodora* is the glandular form. *S. Dugesii* is the form with branched hairs. *S. scorodoniaefolia* var. *crenaea* is a form with somewhat

narrower, more oblong leaves. It is found throughout most of the range and appears to be scarcely noteworthy.

Mexico: Chihuahua; sine loco; Durango: Inde; Aguascalientes: Aguascalientes; Jalisco: Chapala; Guanjuato: Guanajuato; Queretaro: San Juan del Rio; Mexico: Sierra de Guadaloupe, 2500 m; Oaxaca: Zimotlan, 1420 m; San Juan del Estado, 1800 m: Papalo, Cuicatlan, 1800 m; El Parian, 1400 m.

219. S. **rupicola** Fern. in Proc. Am. Acad. 45, 420, 1910 per specim. in Mexico prov. Hidalgo prope Ixmiquilpan a Purpus (no. 431) lectum constituta est; typum in herb. Gray., isotypos in herb. Univ. Calif. (Berkeley) et Smithson. vidi.

Frutex ramosus ramulis superne pilis simplicibus extensis parvis glandulosis; foliorum laminis plus minusve deltoideo-ovatis, obtusis, in basi rotundatis, maximam partem 1,5—2 cm longis, petiolis 3—8 mm longis elatis, pagina superiore bullulato-rugosula sparse glandulosa, inferiore pilis brevibus glandulosis hispidula; floribus 3—6 in verticillastris bracteis caducis subtentis; glomerulis demum inter se 0.5—1 cm distantibus in spicis interruptis viscidis 5—10 cm longis dispositis; calycibus florentibus extus glanduloso-hispidulis 5—6 mm longis; corollarum tubo 7—8.5 mm longo intus ad basim rugis binis ornato, labia superiore 4.5—5.5 mm alta.

This species may very well prove to be an ecotype of *S. scorodoniaefolia*. It is separable chiefly by its smaller habit and glandular indument. The present evidence is inconclusive.

Hidalgo: Ixmiquilpan, Tecozantla.

220. S. **aequidistans** Fern. l. c. 35, 512, 1900 per specim. in Mexico prov. Sinaloa inter Rosario et Colomas a Rose (no. 1609) lectum constituta est; typum in herb. Gray., isotypos in herb. Kew. et Smithson. vidi.

Herba perennis caulibus e caudice lignoso ascendentibus in basi saepe procumbentibus pilis extensis glandulosis sparse vestitis, internodiis 1—4 cm longis; foliorum laminis ovatis sat tenuibus 2—5 cm longis, 12—30 mm latis in apice obtusis in basi rotundatis, petiolis 3—12 mm longis elatis, pagina superiore sparse hirsuta, inferiore pubescente interdum glabrata, margine crenato-serrato; floribus tribus in verticillastris bracteis frequenter tarde deciduis subtentis, glomerulis inter se 1—2 cm distantibus in spicis interruptis 5—15 cm longis dispositis; calycibus florentibus 5—6 mm longis extus pilis extensis glandulosis sparse vestitis, in maturitate paulo auctis; corollarum tubo 6 mm longo, labia superiore 4 mm alta, inferiore 6 mm longa.

Scarcely differs from *S. tepicensis* save in the more lax habit, longer petioles, less dense pubescence and thinner leaves.

Mexico: Sinaloa: San Ignacio. 430 m; inter Rosario et Colomas.

221. **S. tepicensis** Fern. l. c. 45, 420. 1910 per specim. in Mexico prov. Nayarit prope Tepic a Palmer (no. 1984) lectum constituta est; typum in herb. Gray., isotypos in herb. Smithson. et Stockh. vidi. — *S. scorodoniaefolia* var. *subsessilis* Benth. in DC. Prodr. 12. 316, 1848 specim. in Mexico prov. Colima ad sinum Manzanillo a Barclay lectum constituta est: typum in herb. Kew. vidi.

Herba perennis cinerea caulibus ut videtur in basi procumbentibus 40—50 cm altis utrimque pilis simplicibus extensis viscidis sat dense vestitis, internodiis 1—4 cm longis: foliorum laminis ovatis, 1,5—3.5 cm longis, 1—2 cm latis, in apice obtusis interdum acutiusculis, in basi rotundatis, petiolis 2—5 mm longis elatis, margine crenato-serrato, paginis ambabus pilis extensis viscidis hirsutis, superiore bullato-rugosa, inferiore venis prominulis; floribus plerumque tribus in verticillastris in spicis interruptis paniculatis 10—30 cm longis dispositis, glomerulis inter se 1—2 cm distantibus: calycibus florentibus 6—6,5 mm longis extus viscido-hirsutis, in maturitate paulo auctis; corollarum tubo 6,5—7 mm longo ad basim constricto et intus rugis binis ornato. labia superiore 3.5 mm alta, inferiore 6,5—7 mm diametro.

A specimen collected at Tepic by Pennell (no. 19806) is scarcely separable from *S. rupicola* of Hidalgo.

Mexico: Nayarit: Tepic: La Noria: Colima: Manzanillo.

222. **S. paupercula** Epling sp. nov. per specim. in Mexico prov. Puebla in Rancho Posada ad oppidum Puebla a Fr. Arsène (no. 385) lectum constituta est; typum in herb. Smithson. vidi.

Frutex ut videtur ramulis pilis curvis minutis puberulis superne inter flores longioribus extensis glandulosis vestitis; foliorum laminis 1,5—2 cm longis, oblongo-ovatis, in apice obtusis, in basi rotundatis, petiolis 1—3 mm longis elatis, marginibus crenulatis, paginis ambabus rugosis fere glabris, subtus ad venas minutissime sparsissime hirtellis; floribus 1—3 in verticillastris bracteis caducis subtentis glomerulis approximatis in spicis 3—5 cm longis compluribus paniculatis dispositis; calycibus florentibus 5—5,5 mm longis extus pilis brevibus extensis glandulosis vestitis; corollarum tubo 5—5.5 mm longo, intus ad basim rugis binis ornato. labia superiore 2,5 mm alta.

Mexico: Puebla: Puebla, Fort de Guadaloupe et Rancho Posada.

223. **S. occidua** Epling sp. nov. per specim. in Mexico prov. Oaxaca inter San Miguel del Puerto et Sadovi a Liebmann (no. 15697) lectum constituta est; typum in herb. Haun. vidi.

Herba perennis ut videtur vel suffrutex ramulis gracilibus sparse hirtellis: foliorum ut videtur flaccidorum laminis habitu *Salicis* 14—15 cm longis plerumque ellipticis 3—4 cm latis utrimque angustatis, in apice acutissimis in basi ad petiolos 3—5 mm longos acuminatis, marginibus serrulatis, paginis ambabus sparse hirtellis fere glabris; floribus 3—6 et ultra in verticillastris approximatis inter se 3—12 mm distantibus bracteis caducis subtentis in paniculis angustis circiter 15 cm longis dispositis; calycibus florentibus 4,5 mm longis extus appresso-hirtellis, labia inferiore breviore; corollarum tubo 5 mm longo intus ad medium papillis duobus ornatis, labia superiore 4,5 mm alta, inferiore subaequilonga.

Mexico: Oaxaca: inter San Miguel del Puerto et Sadovi (? Xadani).

44. Sect. **Uricae.**

Herbae perennes caulibus ubique pilis extensis longioribus glandulosis hispidis foliis plerumque deltoideo-cordatis petiolatis; floribus circiter 6 in verticillastris bracteis deciduis subtentis in spicis interruptis dispositis; calycum labiis subaequilongis superiore 5-venis; corollarum cyanearum tubo 5—15 mm longo ad basim rugis binis intus ornato (? interdum nudo) et *S. Uricae* invaginato, labia superiore 4—9 mm alta inferiore duplo longiore patente; staminibus in galea inclusis, gubernaculo ad connexum dente parvo ornato; stylo utrimque piloso, ramo postico longiore. Species typica est *S. Urica*. Plantae modo mexicanae modo guatemalenses.

Corollarum tubi 5—7 mm longi; calyces florentes 5,5—6,5 mm longi . . . . . . 224. *S. amarissima*

Corollarum tubi 8—15 mm longi; calyces florentes 7,5—10 mm longi . . . . . . 225. *S. Urica*

224. **S. amarissima** Ort., Hort. Matr. Dec. 4, 1797 per specim. e seminibus mexicanis a Sessé lectis eductum constituta est: specim. vera in herb. horti bot. Matrit. et Delessert. vidi. — *S. circinnata* Cav., Icones 4, 9, t. 318, 1797 per specim. verisimiliter e seminibus a Mociño et Sessé lectis eductum constituta est; specim. verum in herb. Delessert. vidi. — *S. amara* Jacq., Hort. Schoenbr. 3, 2, 1798 per specim. cultum constituta est; typum non reperire potui. — *S. hirsuta* Sessé et Moc., Pl. Nov. Hispan. ed. 2. 8. 1893 et in Fl. Mexic. ed. 2. 7. 1894; specimen ex hort. Matrit. herb. vidi.

Herba perennis altitudine ad 1 m caulibus superne in sulcis crispo-pubescentibus et utrimque pilis longioribus setaceis saepius glandulosis hispidis; foliorum laminis deltoideo-cordatis, 3—8 cm longis, in apice saepius breviter acuminatis, in basi saepius cor-

datis, petiolis 0.5—3 cm longis hispidis elatis, pagina superiore **hirtella**, inferiore cinereo-pubescente; floribus plerumque 6 in verticillastris bracteis saepius ovato-lanceolatis hispido-ciliatis caducis interdum subperstatis subtentis, glomerulis demum inter se 1—2.5 cm distantibus in spicis interruptis 20—30 cm longis dispositis: calycibus florentibus 5,5—6,5 mm longis extus glanduloso-hispidis: corollarum cyanearum tubo 5—7 mm longo, intus ut videtur frequenter nudo, labia superiore 4—5 mm alta, inferiore 7—10 mm diametro.

Mexico: San Luis Potosi: circa urbem 2000—2600 m: Hidalgo: Pachuca, 2800 m, Ixmiquilpan: Mexico: Tlalpujahua; Pedregal; Tlalpam; Temascaltepec: Guadaloupe: Contreras, Tlalnepantla: Guanajuato: Guanajuato: Tlaxcala: Tlaxcala, 2250 m; Puebla: San Luis Tultitlanapa; Oaxaca: Tanetza; Cuicatlan, 1700 m.

225. S. **Urica** Epling sp. nov. per specim. in Guatemala prope Quezaltenango in dumetis a Skutch (no. 82) lectum constituta est; typum in herb. Univ. Calif. (Los Angeles) vidi.

Herba perennis altitudine 30—100 cm et ultra saepius erecta interdum debilis et procumbens ramulis hispidis glandulosis; foliorum laminis maximam partem cordatis frequenter deltoideo-cordatis 5—15 cm longis, in apice acuminatis in basi saepius cordatis, petiolis hispidis glandulosis 2—8 cm longis elatis, pagina superiore saepius **hispida**, inferiore pubescente pallidiore interdum incano-tomentosa, marginibus crenato-serratis; floribus 3—6 in verticillastris bracteis saepius subrotundatis hispidis caducis subtentis, glomerulis demum inter se 1—3 cm distantibus, in spicis interruptis paniculatis viscidis 15—25 cm longis dispositis; calycibus florentibus viscido-hispidis 7,5—10 mm longis; corollarum purpureo-caerulearum tubo 8—15 mm longo ad basim invaginato et intus rugis binis ornato; labia superiore 4.5—9 mm alta, inferiore rotundata 8—12 mm longa.

This species, commonly referred to *S. amarissima*, differs in an accumulation of small ways. The leaves are larger and narrower. Their pubescence is coarser. The flowers are larger. The corolla tube is larger in proportion to the lip. The calyx tube is longer in proportion to the lip. The style is hairier. The tooth on the stamen is scarcely developed. The inflorescence is noticeably looser. The bracts are subrotund and hispid. Within itself it varies considerably more than *S. amarissima*. The leaves are quite variable in size, depauperate specimens from Santa Rosa being ovate, obtuse and 2—3 cm long. The lower limits of the flower sizes recorded here refer to those plants. The pubescence, particularly of the leaves is quite variable in coarseness.

Guatemala: Inter Qualan et Copan prope Taguaini, 900 m: Coban, 1300 m; Volcan Acatenango; Santa Rosa, 1600 m; Zactepequez, San Lucas, 1800 m; Quezaltenango, 2666 m; Amatitlan, 1102 m; Santa Maria de Jesus prope Antigua; Guatemala; Chillan, 1500 m; Estanzuela, Santa Rosa, 800 m; Chimaltenango, 1800 m; Volcan Agua; Laguna de Ayarza, 2600 m: Volcan Imay, 1600 m; Huehuetenango: Huehuetenango, 2100 m.

45. Sect. **Rudes.**

Herbae perennes rudes caulibus paucis e caudice lignoso erectis vel ascendentibus saepe simplicibus; foliis breviter petiolatis subsessilibus ovatis vel oblongis interdum ellipticis saepe induratis; floribus 3—6 in verticillastris bracteis deciduis subtentis in spicis interruptis dispositis: calycum extus plus minusve glandulosorum labia superiore 5—7-venis; corollarum caerulearum vel albarum tubo patentim ventricoso interdum ad basim leniter invaginato, intus nudo; staminum jugo ad connexum in dentem retrorsum patentim dilato; stylo piloso, ramo postico longiore. Plantae campicolae a Brasiliae prov. Minas Geraes usque ad Uruguay et Argentinam septentr. disseminatae sunt; species una in Mexico est. Species normalis est *S. nervosa*.

Plantae austro-americanae
- Folia maximam partem in basi rotundato-angustata nec cordata nec truncata a medio utrimque angustata rarius ovata
  - Folia utrimque glabra interdum pilis longioribus glandulosis sparse conspersa in maturitate coriacea sublucida; caules saepius glabri . . . . 234. *S. ovalifolia*
  - Folia utrimque pilis glandulosis vestita in maturitate sat tenuia; caules pilis extensis glandulosis vestiti
    - Herbae altitudine circiter 30 cm . . . 236. *S. brevipes*
    - Frutex ex conjectura . . . . 237. *S. viscida*
- Folia maximam partem in basi truncato-subcordatis etiam cordatis a basi vel a medio sursum angustata
  - Folia maximam partem 6—10 cm longa 3.5—6 cm lata . . . . 228. *S. cordata*
  - Folia maximam partem 2—7 cm longa, 0.5 ad 4.5 cm lata
    - Folia rotundata-ovata in apice rotundata margine crenato . . . . . . 229. *S. propinqua*

Folia nunc oblonga nunc ovata solum in apice acutiuscula
  Folia ovato-cordata 2—4,5 cm lata
    Folia sat tenuia paginis ambabus pilis crispulis cinereo-villosis rarius glabratis nec coriaceis . . . . . 227. *S. cardiophylla*
    Folia coriacea indurata pagina superiore subnitida pilis tenuissimis extensis conspersa inferiore pilis brevibus rectis et longioribus vestita 230. *W. durifolia*
  Folia oblongo-ovata vel oblonga 0,5 ad 2,5 cm lata saepius supra medium angustata
    Plantae maximam partem 50—90 cm alta; folia 1,5—2.5 cm lata . . . 231. *S. lucida*
    Plantae 15—60 cm altae: folia 0,5 ad 1,5 cm lata
      Folia sat tenuia pilis strictis extensis conspersa ceterum glabra . . . . 265. *S. caaguazuensis*
      Folia coriacea subtus plus minus puberula et pilis longioribus conspersa
        Pagina inferior dense puberula . 233. *S. nervosa*
        Pagina inferior fere glabra . . . . 232. *S. rosmarinoides*
Plantae mexicanae . . . . 226. *S. sphacelifolia*

Except for *S. cardiophylla*, *S. cordata* and *S. sphacelifolia* which are readily recognized, this group presents a puzzling complex. *S. propinqua* is known only from the type but seems quite distinct; it was associated with *S. procurrens* by Bentham but the stamen structure and calyx proportions indicate its alliance here. For the remainder of the group, I have sought to characterize the principal units. I do not believe that the species proposed by Briquet, based on scant and often fragmentary specimens, help in understanding the group. It is possible, however, that some, particularly *S. paraguariensis*, *S. scytinophylla* and *S. Isabellei*, may emerge upon better acquaintance. *S. sphacelifolia* of Sinaloa, Mexico, appears very close to *S. cordata* of Rio Grande do Sul.

226. **S. sphacelifolia** Epling sp. nov. per specim. in Mexico prov. Sinaloa prope Balboa a Ortega (no. 5076) lectum constituta est; typum in herb. Smithson., isotypum in herb. Kew. vidi.

Herba perennis caulibus ascendentibus pilis brevibus glandulosis et longioribus villosis praesertim inter flores viscidis; foliorum laminis oblongis plerumque 8—10 cm longis, 3—4 cm latis, supra

medium angustatis in apice obtusiusculis, in basi ad petiolos 2—4 mm longos rotundato-angustatis, marginibus crenato-serratis, pagina superiore hirtella subbullata, inferiore incano-pubescente; floribus 3—6 in verticillastris bracteis rotundatis tarde deciduis subtentis, glomerulis inter se 1—1,5 cm distantibus in spicis interruptis 15—40 cm longis dispositis; calycibus florentibus extus viscido-villosis 6,5 mm longis; corollarum (?) albarum tubo 8,5 mm longo, labia superiore 5,5 mm alta, inferiore rotundata 10 mm diametro.

Mexico: Sinaloa: Balboa.

227. **S. cardiophylla** Benth., Lab. Gen. et Sp. 721, 1833 et in DC. Prodr. 12, 317, 1848 per specim. in ? Paraguay ab ignoto lectum constituta est; typum olim in herb. Hook. hodie in herb. Kew. vidi. — *S. cinerarioides* Briq. in Bull. Soc. Bot. Genève 5, 118, 1889 per specim. in Paraguay prope Asuncion a Balansa (no. 989) lectum constituta est; specimina vera in herb. Kew., Par., Bruxell., Univ. Goett. et Stockh. vidi. — *S. approximata* Briq. l. c. 5, 119, 1889 per specim. in Paraguay prope Luque a Balansa (no. 989a) lectum constituta est; specimina vera in herb. Kew., Boissier., Berolin. et Par. vidi (non Pau, Not. Bot. Fl. Españ. 1, 7, 1887). — *S. approximata* var. *Kuntzeana* Briq. in Bull. Herb. Boiss. 5, 582, 1896 per specim. in Paraguay a Kuntze lectum constituta est; typum in herb. Delessert. vidi. — *S. Rojasii* Briq. in Bull. Herb. Boiss., sér. 2, 7, 604, 1907 per specim. in Paraguay in regione Gran Chaco prope Loma Clavel a Rojas (Hassler 2566) lectum constituta est; typum in herb. Delessert., isotypos in herb. Kew. et Univ. Calif. (Los Angeles) vidi. — ? *S. Isabellei* Briq. in Ann. Conserv. et Jard. Bot. Genève 2, 153, 1898 per specim. in Brasiliae prov. Rio Grande do Sul ab Isabelle lectum constituta est; typum in herb. Delessert. vidi.

Herba perennis altitudine ad 1 m, caulibus e caudice lignoso erectis, retrorse et crispe villosulis superne rarius utrimque plus minusve glandulosis; foliorum laminis 2,5—6 cm longis, 2—4,5 cm latis, infimis rotundo-cordatis, supremis maximam partem deltoideo-ovatis, in apice nunc obtusis nunc acutis, in basi rotundatis et plus minusve cordatis, margine crenato, paginis ambabus saepius cinereo-villosis, inferiore nunc dense glandulosa nunc incana, petiolis ad 1 cm longis supremis subnullis elatis; floribus 3—6 in verticillastris bracteis lanceolatis subperstatis acutis 4—6 mm longis subtentis, glomerulis inter se 1—2 cm distantibus in spicas interruptas 10—30 cm longas approximatis; calycibus florentibus extus glandulosis et saepius hispidis, 5—6 mm longis, in maturitate magnitudine variis 6—10 mm longis, labia superiore rotundato-mucronata, erecto-recurva, inferioris

laciniis leniter acuminatis, pedicellis 4—5 mm longis elatis; corollarum caerulearum tubo 5.5—6 mm longo ventricoso intus nudo, labia superiore 4—6 mm alta, inferiore 8—12 mm diametro ad palatum albo-maculata.

Paraguay: Estancia Armonia; in regione Gran Chaco prope Loma Clavel. lat. 23° 20′ S.; in regione cursus superioris fluminis Y-aca; prope Asuncion; in loma prope Cordillera de Altos; Tobati; in silva prope Tacuru pucu; in dumetis prope lacum Ypacaray; in regione collium Cerros de Tobaty; in campis Itacurabi; ad silvae marginem prope Caraguatay; inter Rio Apa et Rio Aquidabam; Luque; Asuncion; in regione lacus Ypacaray. — Argentina: Chaco: Las Palmas; Entre Rios: Parana; Formosa: ad Villa Formosa. — Bolivia: Gran Chaco: prope Tatarenda in loco aprico in margine silvae inter graminea et herbas altas.

228. **S. cordata** Benth., Lab. Gen. et Sp. 268, 1833 et in DC. Prodr. **12**, 319, 1848 per specim. in Brasiliae prov. Rio Grande do Sul a Sellow (no. 3060) lectum constituta est; typum verum non reperire potui, isotypos in herb. Mus. Berol., Kew. et Univ. Calif. (Los Angeles) vidi.

Herba perennis altitudine ad 80 cm, caulibus e caudice duro erectis sat crassis villosis et pilis longioribus extensis mollibus ornatis; foliorum laminis 6—10 cm longis, 3,5—6 cm latis, ovatis, in apice acutiusculis obtusisve, in basi leniter cordatis, margine irregulariter duplicato-crenato, pagina superiore hirsuta, inferiore incano-villosa subtomentosa ambobus mollibus, petiolis 4—8 mm longis elatis; floribus circiter 6 in verticillastris bracteis caducis ovatis pilosis 8—10 mm longis subtentis, glomerulis inter se 1—3 cm distantibus in spicas interruptas strictas ad 30 cm longas dispositis; calycibus florentibus 6—8 mm longis, extus pilis glandulosis et longioribus extensis mollibus vestitis, in maturitate 8—10 mm longis, labia superiore inferioris laciniisque breviter acuminatis, pedicellis 3—4 mm longis elatis; corollarum albarum tubo 7—9 mm longo ventricoso intus nudo, labia superiore 4,5—6 mm alta, inferiore 7—10 mm alta.

Brasilia: Rio Grande do Sul: ad Piratiny prope Pelotas in campo graminoso.

229. S. propinqua Benth., Lab. Gen. et Sp. 267, 1833 et in DC. Prodr. **12**, 318, 1848 per specim. in Brasilia a Sellow (no. 1464) lectum constituta est; typum in herb. Kew., isotypum in herb. Berolin. et Univ. Calif. (Los Angeles) vidi.

Suffrutex ut videtur ramis erectis dense hispido-glandulosis; foliorum laminis 2,5—5 cm longis, 2—4 cm latis, infimis fere rotundis, superioribus late ovatis, omnibus in apice vel rotundatis vel obtusis, in basi cordatis, petiolis 3—8 mm longis

glandulosis elatis, margine crenato, paginis ambabus glanduloso-hirsutis, inferiore pallidiore; floribus 3—6 in verticillastris bracteis ovatis acutis 4—5 mm longis, glandulosis caducis subtentis, glomerulis inter se 1—2 cm distantibus; calycibus florentibus extus dense glandulosis 7—8 mm longis, in maturitate 8 mm longis, labia superiore rotundata subrecurva, inferioris laciniis breviter acuminatis, pedicellis 4—5 mm longis elatis; corollarum tubo 8 mm longo, intus nudo, ventricoso, labia superiore 4,5 mm alta inferiore 7—8 mm longa.

Brasilia: „Conjadas Paulistes."

230. **S. durifolia** Epl. in Rep. Spec. Nov., Beiheft 85, 85, 1935 per specim. in Argentinae Misiones ad San Ignacio Loreto in campo a Ekman (no. 1831) lectum constituta est; typum in herb. Mus. Stockh. vidi.

Herba perennis altitudine ad 1 m et ultra, caulibus superne pilis brevibus pubescentibus et longioribus rectis saepe glandulosis extensis plus minusve vestitis; foliorum coriaceorum laminis 3—6 cm longis 2—3.5 cm latis, ovatis, in apice acuminatis, in basi cordatis amplexicaulibus sessilibus, margine crenato-serrato convexiore, pagina superiore pilis tenuissimis extensis conspersa subnitida, inferiore plus minusve glanduloso-pubescente et pilis longioribus conspersa, venis reticulato-prominulis; floribus 3—6 in verticillastris bracteis ovato-acuminatis hirsutis 6—12 mm longis deciduis subtentis, glomerulis inter se 1—2 cm distantibus in spicas interruptas 15—40 cm longas approximatis; calycibus florentibus 6—7 mm longis extus pilis glandulosis extensis vestitis, in maturitate paulo auctis, pedicellis 3—4 cm longis elatis; corollarum tubo intus nudo 7,5 ad 10 mm longo.

Paraguay: in Sierra Amambay. — Argentina: Misiones: Posadas, San Ignacio-Loreto, in campo; Santa Ana.

231. **S. lucida** Briq. in Bull. Soc. Bot. Genève 5, 118, 1889 per specim. in Paraguay prope Villa Rica a Balansa (no. 990) lectum constituta est; specim. vera in herb. Mus. Par. et Boissier. vidi. — ? *S. paraguariensis* Briq. in Bull. Herb. Boiss., sér. 2. 7, 605, 1907 per specim. in Paraguay prope Caaguazu in campis combustis a Hassler (no. 9237) lectum constituta est; typum in herb. Delessert. vidi. — ? *S. scytinophylla* Briq. l. c. p. 605 per specim. in Paraguay prope Igatimi in campis a Hassler (no. 4725) lectum constituta est; typum in herb. Delessert. vidi. — ? *S. aridicola* Briq. l. c. p. 606 per specim. in Paraguay in campis ad flumen Corrientes a Hassler (no. 5846) lectum constituta est; typum in herb. Delessert. vidi. — ? *S. dumeticola* Briq., l. c. p. 607

per specim. in dumetis prope Caaguazu a Hassler (no. 8894) lectum constituta est; typum in herb. Delessert. vidi.

Herba perennis caulibus paucis e caudice lignoso erectis nunc virgatis nunc sparse ramosis, altitudine maximam partem 50—90 cm, pilis brevibus pubescentibus et longioribus extensis plus minusve vestitis; foliorum laminis coriaceis sessilibus amplexicaulibus, infimis 4—7 cm longis 1,5—2,5 cm latis, supremis gradatim deminutis, omnibus saepius oblongo-ovatis interdum oblongis supra medium angustatis in apice nunc acutis nunc obtusis in basi truncato-subcordatis, pagina superiore nitida tamen pilis rectis sparse conspersa rarius glabra, inferiore pallidiore pilis brevissimis saepius appressis vestita et pilis longioribus rectis saepe conspersa, margine crenato: floribus 3—6 in verticillastris bracteis caducis ovato-acuminatis subtentis, glomerulis inter se 1—2 cm distantibus in spicas interruptas 15—30 cm longas approximatis; calycibus florentibus 7—8 mm longis extus hirsutis, in maturitate paulo auctis, pedicellis 4—5 mm longis elatis; corollarum albarum vel caerulearum tubo 6,5—8 mm longo ventricoso intus nudo, labia superiore 6—7 mm alta, inferiore 9—10 mm diametro rotundata.

S. paraguariensis is a form suggesting *S. ovalifolia* in shape of the leaves which are obtuse at the apex; the corolla is said to have been white. *S. scytinophylla* is very similar but with blue flowers. Hassler 7002 appears to be intermediate with these. Save in the somewhat more oval obtuse leaves I see little difference between these and *S. lucida*. *S. aridicola* and *S. dumeticola* are puzzling forms which are less certainly referrable here. The numerous Hassler collections appear to connect all.

Paraguay: Villa Rica; in campis Pirayu; Estancia Armonia; in campis prope Caaguazu: prope Igatimi in campis; in regione fluminis Corrientes; in regione cursus superioris fluminis Y-aca.

232. **S. rosmarinoides** St. Hil. ex Benth., Lab. Gen. et Sp. 269, 1833 et in DC. Prodr. 12. 320, 1848 per specim. in Uruguay prope El Salto Grande a St. Hilaire (no. 2640) lectum constituta est: typum in herb. Mus. Par. vidi. — *S. rigida* Benth., l. c. p. 269 et l. c. p. 320 per specim. in Brasilia a Sellow lectum constituta est; typum in herb. Mus. Berolin., isotypum in herb. Kew. vidi (non Thunb., Prod., Fl. Cap. 96, 1800). — *S. minarum* Briq. in Bull. Herb. Boiss. 4. 855, 1896 per specim. in Brasiliae prov. Minas Geraes prope Contendas a Kuntze lectum constituta est; typum in herb. Delessert., isotypum in herb. horti bot. Nov. Eborac. vidi. — *S. Hassleri* Briq. in Bull. Herb. Boiss., sér. 2, 7, 608, 1907 per specim. in Paraguay in campo prope San Estanis-

lao a Hassler (no. 4118) lectum constituta est: typum in herb. Delessert. vidi. — ? *S. ovalifolia* var. *villosa* Benth., l. c. p. 267. 1833 et l. c. p. 319 per specim. in Uruguay prope El Salto Grande a St. Hilaire (no. 2545) lectum constituta est; typum in herb. Mus. Par. vidi.

Herba perennis altitudine ad 40 cm, caulibus erectis virgatis, e caudice lignoso, pilis brevioribus et longioribus villoso-pilosis superne subglandulosis, internodiis 1—6 cm longis; foliorum laminis sessilibus coriaceis rigidis, 1—6,5 cm longis, 6—15 mm latis, oblongis, sessilibus in basi saepius truncato-subcordatis interdum rotundatis supra medium angustatis, in apice acutiusculis rarius obtusis, margine crenato, pagina superiore glabra vel pilis longioribus paucis conspersis, inferiore nunc puberula nunc glabra, venis reticulatis; floribus 3—6 in verticillastris bracteis caducis 3—6 mm longis saepe glandulosis ovatis acuminatis subtentis, glomerulis inter se 1—3 cm distantibus in spicas interruptas 10—20 cm longas approximatis; calycibus florentibus 5—7 mm longis, extus hirsutis, in maturitate 8 mm longis, labia superiore rotundata, inferioris laciniis breviter acuminatis, pedicellis 4,5 mm longis elatis; corollarum caerulearum tubo 6—8 mm longo, leniter ventricoso intus nudo, labia superiore 4—6 mm alta, inferiore 10—12 mm diametro.

It is to be regretted that the descriptive name commonly applied to this species is invalid; the next available name, having been applied to a narrow leaved form, is misleading.

Brasilia: Minas Geraes: in Serra da Maeda; Rio San Ignacio; Caldas; Contendas, Piumhy; Bello Horizonte. — São Paulo: in campis prope Itu; inter R. de Paciencia et Rio de Veravinha; prope Mogy-merim; São Paulo (Encontro Represa); Villa Marianna; Patr. de Sapucahy; ad Morro Pellado; ad Guatemim-Pinheiro: — Goyaz: sine loco; — Parana: Desiro Ribas, in campo; Jaguariahyva in campo; Villa Velho in campo; Serrinha; — Rio Grande do Sul: Rio Jacuhy; S. Borja. — Uruguay: El Salto Grande. — Paraguay: Sierra Amambay; Cordillera de Altos; in campis prope São Estanislao: in Cordillera Villa Rica; ad ripam Rio Peribiby. — Argentina: Corrientes: circa Rio Aguapay; Huzaingo; inter Campo Nervo et Palmeira.

233. **S. nervosa** Benth., Lab. Gen. et Sp. 268, 1833 et in DC. Prodr. **12**, 319, 1848 per specim. in Brasiliae prov. Rio Grande do Sul a Sellow lectum constituta est; specimina certa in herb. Mus. Berolin. et Kew. vidi.

Herba perennis altitudine ad 60 cm, caulibus erectis virgatis, verisimiliter e caudice lignoso, breviter pubescentibus et pilis

extensis longioribus saepius conspersis superne dense glanduloso-villosis; foliorum laminis subsessilibus coriaceis rigidis 2—4 cm longis, 10—15 mm latis, anguste oblongo-ovatis, in basi rotundato-truncatis, supra medium angustatis, in apice acutis supremis frequenter subrotundis, acuminatis, margine crenata, pagina superiore nitidula, minute hispidula, inferiore densissime puberula, venis reticulatis, ad basim pilis longioribus paucis conspersis; floribus 3—6 in verticillastris bracteis ovatis acuminatis deciduis 4—5 mm longis glandulosis subtentis, glomerulis inter se 1—2 cm distantibus in spicis interruptis strictis elongatis ad 30 cm longis dispositis; calycibus florentibus 6—7 mm longis, extus breviter glandulosis, in maturitate 8 mm longis, labia superiore rotundata, inferioris laciniis breviter acuminatis, pedicellis 4—5 mm longis elatis: corollarum caerulearum tubo 7—8 mm longo leniter ventricoso intus nudo, labia superiore 5—6 mm alta, inferiore rotundata 12 mm diametro.

Brazil: Rio Grande do Sul: prope Cruz Alta in campis apricis: ad Pinhal prope Santa Maria in campo. — Paraguay: Cord. de Altos; in regione fluminis Alto Parana; in Sierra de Amambay. — Argentina: Gran Chaco: Corrientes: ad Saladas.

264. **S. ovalifolia** St. Hil. ex Benth. l. c. 267, 1833 et l. c. 12, 318, 1848 per specim. in Uruguay in pascuis Missionum a St. Hilaire (no. 2606) lectum constituta est; typum in herb. Mus. Par., isotypum in herb. Kew. vidi. — *S. campicola* Briq. in Bull. Herb. Boiss., sér. 2, 7, 610, 1907 per specim. in Paraguay in valle fluminis Y-Aca in campis prope Valenzuela a Hassler (no. 7019) lectum constituta est: typum in herb. Delessert. — ? *S. Isabellei* Briq. in Ann. Conserv. Bot. Genève 2, 153, 1898 per specim. in Brasiliae prov. Rio Grande do Sul a Isabelle lectum constituta est; typum in herb. Delessert. vidi. — ? *S. nitidula* Briq. l. c. 2. 152, 1898 per specim. in Brasiliae prov. Rio Grande do Sul a Isabelle lectum constituta est; typum in herb. Delessert. vidi. — *S. pachypoda* Briq. l. c. Sér. II, 7, 609, 1907 per specim. in Paraguay in campo prope San Blas (Yeruti) a Hassler (no. 5762) lectum constituta est; typum in herb. Mus. Delessert.

Herba perennis altitudine ad 40 cm, caulibus e caudice repente ascendentibus, glabris, superne glandulosis, internodiis 2—4 cm longis; foliorum laminis subsessilibus 2,5—5 cm longis, 1,5—2,5 cm latis, coriaceis, ovatis vel ovato-oblongis, in apice obtusis, in basi saepius rotundatis, frequenter angustatis, margine crenato-serrato crenis vix 0,5 mm altis, paginis ambabus glabris, interdum pilis rigidis sparse conspersis; floribus 3—6 in verticillastris bracteis 3—5 mm longis deciduis ovatis subtentis,

glomerulis demum inter se 1—2,5 cm distantibus, calycibus florentibus 4,5—7 mm longis, extus glanduloso-hispidulis, in maturitate paulo auctis, labia superiore acuta, inferioris laciniis breviter acuminatis, pedicellis 4—5 mm longis elatis; corollarum caerulearum tubo 6—7 mm longo, intus nudo, ventricoso, invaginato, labia superiore 5—6 mm alta, inferiore fere 10 mm longa, subrotundata; staminibus in faucibus positis, filamento 2 mm longo, jugo ad medium connexo, gubernaculo 3—3,5 mm longo, ad connexum in dentem retrorsum dilato; stylo vix exserto, superne utrimque villoso; gynobasis cornu nuculas sub anthesi subaequante; nuculis 2,2 mm longis.

S. Isabellei is based upon the fragment of a plant bearing a few upper nodes. This fragment is very similar to Niederlein 513 and to Ekman 1835. From *S. ovalifolia* it differs chiefly in the smaller flowers and very minute pubescence which renders the leaves dull. *S. nitidula* is similar but nearly glabrous and with oval leaves.

Brasilia: Rio Grande do Sul: Canroas, prope Porto Alegre in campo aprico; ad Piratiny prope Pelotas in campo. — Uruguay: ad Missiones Uruguayenses. — Paraguay: ad flumen Tapiraguay; in valle fluminis Y-aca in campo prope Valenzuela; in regione fluminis Alto Parana; in campo prope San Blas (Yeruti); Topytu. — Argentina: Misiones: Santa Ana; San Ignacio; Posadas, in rupestribus prope praedium La Granja; in campo Yobeliri.

235. **S. caaguazuensis** Briq. in Bull. Herb. Boiss., sér. 2, 7, 609, 1907 per specim. in Paraguay in campis prope Caaguazu a Hassler (no. 9121) lectum constituta est; typum in herb. Delessert. vidi.

Herba perennis caulibus paucis altitudine 15—25 cm e caudice lignoso ascendentibus acute quadratis sulcatis pilis longioribus rigidis conspersis; foliorum laminis sat tenuibus 1—4 cm longis, 8—15 mm latis, anguste ovatis in apice acutis, fere sessilibus, margine crenato-serrato, paginis ambabus pilis longioribus rigidis sparse conspersis, ceterum glabris; floribus 3—6 in verticillastris bracteis ovato-lanceolatis hispidis 3—4 mm longis deciduis subtentis, inter se 0,5—2 cm distantibus; calycibus extus hispidis et pilis longioribus conspersis 6—6,5 mm longis, in maturitate paulo auctis, labia superiore rotundata, inferioris laciniis breviter acuminatis ad medium connatis, pedicellis 3—4 cm longis elatis; corollarum caerulearum tubo 6—6,5 mm longo, intus nudo, subventricoso, labia superiore 5 mm alta, inferiore circiter 12 mm diametro, rotundata.

Paraguay: San Estanislao; Caaguazu in campis combustis. Other specimens possibly referrable here are those collected in Goyaz by Glaziou (no. 21930) and in Minas Geraes by Claussen. The species differs from *S. brevipes* chiefly in habit and lack of glandular pubescence.

236. **S. brevipes** Benth. in DC. Prodr. 12, 320, 1848 per specim. in Brasiliae prov. Minas Geraes in Serra d'Ourada a Pohl (no. 491) lectum constituta est; typum in herb. Kew. vidi. — *S. Benthami* Pohl ex Schmidt in Mart., Fl. Brasil. 8, 187, 1858 per specim. idem constituta est.

Herba perennis altitudine ad 30 cm. caulibus paucis e caudice lignoso ascendentibus glanduloso-pilosis; foliorum laminis petiolis brevibus 1—3 mm longis elatis forma variis, nunc ellipticis utrimque acutis, nunc oblongis utrimque obtusis, interdum rotundato-ovatis, sat tenuibus, 2,5—6 cm longis, 12—30 mm latis, margine crenato, paginis ambabus glandulosis pilis quam caulinares brevioribus et pilis longis rigidis saepius conspersis; floribus 3—6 in verticillastris bracteis caducis 2—4 mm longis ovatis subtentis, glomerulis nunc approximatis nunc inter se 1—2 cm distantibus; calycibus florentibus 6—8 mm longis, extus glandulosis, in maturitate paulo auctis, labia superiore rotundata mucronata, inferioris laciniis acutis, pedicellis 2—4 mm longis elatis; corollarum caerulearum tubo 6—7 mm longo, intus nudo, ampliato, subventricoso, labia superiore 5 mm alta, inferiore rotundata 10—12 mm.

Brasilia: Minas Geraes: Caldas in campo arido; Ouro Branco ad S. Julião; Congonhas do Campos; in Serra D'Ourada.

237. **S. viscida** St. Hil. ex Benth., Lab. Gen. et Sp. 268, 1833 et in DC. Prodr. 12, 319, 1848 per specim. in Brasiliae prov. Minas Geraes a St. Hilaire (no. 34) lectum constituta est; specimina certa in herb. Mus. Par. et Kew. vidi.

(?) Frutex ramis glanduloso-villosis; foliorum laminis petiolis 2—3 mm longis glanduloso-pilosis elatis, 3—6 cm longis, 13—16 mm latis, oblongis, acutis, in basi rotundatis, margine leniter crenato-serrato, paginis ambabus inferiore praesertim ad venas glanduloso-hirsutis; floribus tribus in verticillastris bracteis caducis non visis subtentis, glomerulis inter se 1—1,5 cm distantibus; calycibus florentibus 8 mm longis, extus glanduloso-hispidis, in maturitate paulo aucto, labia superiore 2 mm longa, rotundata, inferioris laciniis acutis, pedicellis 2—3 mm longis elatis; corollarum tubo 11 mm longo, ventricoso intus nudo, labia superiore 4,5 mm alta, inferiore 5—6 mm longa.

Brasilia: Minas Geraes: sine loco: Rio Janeiro: in Serra Negra. — Uruguay: ? prope St. Theresc.

46. Sect. **Farinaceae.**

Subsect. *Farinaceae* Epl. in Rep. Spec. Nov., Beiheft 85, 87, 1935; species typica est *S. farinacea*.

Herbae perennes caulibus paucis magnam partem e caudice lignoso ascendentibus, interdum frutices altitudine ad 3 m, foliis variis modo oblongis vel linearibus rarius elliptico-oblongis modo ovatis vel deltoideo-ovatis pilis appressis saepius vestitis rarius longioribus extensis etiam glandulosis setosis; floribus plerumque 3—6 et ultra (rarius 1—3) in verticillastris bracteis modo caducis modo perstatis saepius lanceolatis subtentis in spicis interruptis interdum moniliformibus dispositis; calycum labia superiore 3—7-venia ore frequenter subtruncato; corollarum caerulearum tubo sat ventricoso intus saepius nudo integro frequenter tamen leniter invaginato enim vero papillis binis ornato, labia superiore galeata quam inferior patens patentim breviore, inferioris lacinia media sat ampla; staminibus in galea inclusis, gubernaculo ad connexum dente retrorso ornato; stylo pubescente. Plantae imprimis mexicanae, species una in Argentina habitat.

Despite the diversity in habit within this series the cross-relationships suggest the unity here indicated. *S. amissa* and *S. pallida* are remarkably similar and with *S. similis* from a related group. *S. platycheila* seems least referable here.

Plantae argentinae . . . . 241. *S. pallida*
Plantae boreali-americanae
  Foliorum laminae petiolis magnam partem 1—4 cm longis elatae
    Bracteae perstatae; calyces extus sparse hirtelli
      Plantae arizonicae dictae . . . . 239. *S. amissa*
      Plantae Californiae inferioris
        Folia pilis minutissimis incana; calycum labiae 3—5 mm longae in maturitate amplae hiantes habitu *S. ballotaeflorae* . . . . 238. *S. platycheila*
        Folia glabrata viridia; calycum os subtruncatus . . . . 240. *S. similis*
    Bracteae caducae; calyces extus farinacei vel lanulosi, labia superiore saepius 3-venis
      Flores plerumque 3—6 in verticillastris dispositi; calyces extus lanulosi 4,5 m longi; corollarum tubi 5 mm longi 243. *S. lanicalyx*

Flores 12 et ultra in verticillastris dispositi; calyces extus pilis minutis appressis farinacei; corollarum tubi 6—9 mm longi . . . . 242. *S. farinacea*

Foliorum laminae petiolis 0,5—1 cm longis interdum subnullis elatae; calyces vel glabri vel hispiduli interdum setacei, nullomodo farinacei

Herbae variae a Carolina usque ad Texas et in Nuovo Leon incolunt . . . . 244. *S. azurea*

Herbae imprimis mexicanae in Texas solum in parte as Chihuahua spectante incolunt

Caules superne pilis brevibus extensis glandulosis induti; radices tuberiferae; folia elliptica . . . . 247. *S. oblongifolia*

Caules pilis extensis saepius longioribus setosi nisi omnino glabri: folia linearia

Pili acuti eglandulosi . . . . 245. *S. leptophylla*

Pili capitato-glandulosi . . . . 246. *S. heterotricha*

238. **S. platycheila** Gray in Proc. Am. Acad. 8, 292. 1870 per specim. in Mexico in insula Carmen (Puerto Ballandra) in sinu Californiae inferioris a Palmer (no. 1869) lectum constituta est; typum in herb. Gray. vidi.

Frutex ut videtur intricate ramosus altitudine 1,5—2 m ramis incrassatis ut videtur herbaceis ramulis pilis minutissimis appressis incanis demum glabris; foliorum laminis ut videtur coriaceis 2—5 cm longis, in apice obtusis vel rotundatis, in basi ad petiolos plerumque 1—2 cm longos rotundato-angustatis rarius subcordatis, marginibus crenulatis subintegris, paginis ambabus praesertim juvenilium pilis minutissimis appressis mollissime incanis demum glabratis; floribus 6 in verticillastris bracteis lineari-lanceolatis perstatis subtentis in spicis interruptis 5—15 cm longis dispositis, glomerulis demum inter se 1—5 cm distantibus; calycibus florentibus circiter 10 mm longis amplis, extus pilis minutissimis appressis incanis labiis subaequilongis obtusis, superiore in maturitate hianti-recurva, 5—7-veniis; corollarum tubo 7 mm longo ad medium invaginato superne ventricoso, labia superiore 5 mm alta.

Mexico: Baja California: Carmen Island, Puerto Ballandra; Santa Cruz Island.

239. **S. amissa** Epling sp. nov. per specim. in Arizona in montibus Sanctae Catalinae ad rivulos a Pringle lectum constituta est; typum in herb. Smithson., isotypos in herb. Acad. Sci. Philad., Mus. Field. et horti bot. Nov. Eborac. vidi.

Herba perennis elata ut videtur ramulis superne hirtellis; foliorum laminis ovatis vel deltoideo-ovatis 5—10 cm longis, in apice acutis, leniter acuminatis, in basi rotundato-subtruncatis, pagina superiore hirtella, inferiore sparse pubescente cinerea, marginibus irregulariter serratis, petiolis 2,5—4 cm longis elatis; floribus circiter 6 in verticillastris bracteis parvis anguste deltoideis perstatis vel tarde deciduis subtentis in spicis interruptis laxis paniculatis 15—20 cm longis dispositis; calycibus florentibus extus appresso-hirtellis 6 mm longis, in maturitate pedicellis 3—4 mm longis elatis; corollarum tubo 6,5—7 mm longo, labia superiore 3,5 mm alta.

One is led to wonder whether an exchange of labels has not taken place, for this plant has not been collected twice, although the region is well known.

Arizona: Pima: Catalina Mts.

240. S. **similis** Brandegee in Zoë 5, 108, 1901 per specim. in Mexico prov. Baja California in La Mesa prope San Felipe (in regione australi) a Brandegee lectum constituta est; typum in herb. Univ. Calif. (Berkeley) vidi.

Frutex altitudine 2—3 m et ultra, ramulis gracilibus minute appresso-hirtellis cinereis, juvenilium albidis; foliorum laminis maximam partem deltoideo-ovatis 3,5—8 cm longis tenuibus in apice obtusiusculis in basi saepius rotundato-truncatis, petiolis minute appresso-hirtellis gracilibus 1,5—3 cm longis elatis, marginibus crenato-serratis, paginis ambabus demum glaberrimis, juvenilium minutissime appresso-hirtellis cinereis; floribus circiter 6 in verticillastris bracteis perstatis linearibus vel lanceolatis calyces superantibus subtentis, in spicis interruptis laxis 5—8 cm longis dispositis, glomerulis demum inter se 5—30 mm distantibus; calycibus florentibus 6,5—7 mm longis extus minutissime appresso-hirtellis saepius cinereis labiis brevissimis superiore 5—7-veniis; corollarum tubo 5,5—6,5 mm longo intus infra medium invaginato et papillis binis brevibus ornato; labia superiore 4,5 mm alta, inferiore duplo longiore.

Mexico: Baja California: La Mesa pr. San Felipe (in regione australi): Sierra de Laguna, inter San Bernardo et El Sanz, 1500 m; ad marginem desertorum Viscaino prope San Ignacio; Todos Santos; Arroyo San Felipe; San Pablo in saxosis, 200 ad 250 m.

241. S. **pallida** Benth., Lab. Gen. et Sp. 250, 1833 et in DC. Prodr. 12, 305, 1848 per specim. in Uruguay prope Salto Grande a Sellow (no. 946) lectum constituta est: typum in herb. Mus. Berol., isotypum in herb. Kew. vidi. — *S. serrata* Benth., l. c. p. 257, 1833 et l. c. p. 12, 306, 1848 per specim. in Uruguay

prope Vivaras a Sellow lectum constituta est: typum in herb. Mus. Berol., isotypum in herb. Kew. vidi. — *S. uruguayensis* St. Hil. ex Benth., l. c. p. 257 et l. c. p. 306, per specim. in Brasiliae prov. Rio Grande do Sul in Campo San Jose ad ripas fluminis Uruguay a St. Hilaire (no. 2501) lectum constituta est; typum in herb. Mus. Par. vidi. — *S. canescens* Benth., l. c. p. 250, 1833 (nomen). — *S. Balansae* Briq. in Bull. Soc. Bot. Genève 5, 117, 1889 per specim. in Paraguay in campis ad Cerro Lambare a Balansa (no. 987) lectum constituta est; specim. certum in herb. Mus. Par. vidi (non *S. Balansae* Noë ex Coss., Notes crit. 139, 1852). — *S. Rouyana* Briq. l. c. 5, add. p. 3, 1889 per specim. idem constituta est.

Herba perennis altitudine ad 1 m ramosa, caulibus superne minute crispulo-puberulis cinereis; foliorum laminis 3—8 cm longis, 0,8—5 cm latis, deltoideo-ovatis, supremis deltoideo-lanceolatis, in apice acutis in basi rotundato-angustatis etiam truncatis, marginibus serratis rectiusculis, paginis ambabus minute cinereo-puberulis interdum glabratis, petiolis 0.5—3 cm longis elatis; floribus 3—6 in verticillastris bracteis lanceolatis recurvis subperstatis 5—10 mm longis subtentis, glomerulis inter se 0.5 ad 2 cm distantibus in spicas interruptas graciles 10—25 cm longas approximatis; calycibus florentibus 6—7 mm longis extus appresso-hirtellis incanis in maturitate 7—8 mm longis, labia superiore truncato-rotundata mucronata, 1,5—2 mm alta, inferioris laciniis breviter acuminatis paulo longioribus pedicellis 2—3 mm longis elatis; corollarum caerulearum tubo 7—8 mm longo ventricoso intus nudo, labia superiore 4.5—5 mm alta, inferiore 8—10 mm diametro.

Brasil: Rio Grande do Sul: in campos San Jose ad ripas fluminis Uruguay. — Uruguay: Salto Grande; Vivaras; ad ripas Rio Negro prope Mercedes; prov. Salto, in ripas fluminis Uruguay. — Paraguay: ad flumen Pilcomayo; in campis prope Cerro Lombare. — Argentina: Chaco: ad coloniam Resistencia; Corrientes: ad ripas fluminis Parana; Misiones: in regione fluminis Alto Parana; Santa Fe: ad coloniam Humboldt; Reconquista. Ocampo; Entre Rios: ad Parana: Paso de Douraguillo; prope Barillal; La Paz; Brete; Buenos Aires: Barrancas al Sud; Avellaneda.

242. **S. farinacea** Benth., Lab. Gen. et Sp. 274, 1833 et in DC. Prod. 12, 302, 1848 per specim. in Texas inter Rio Guadalupe et Rio Colorado a Berlandier (no. 1654) lectum constituta est; typum in herb. Kew. vidi. — *S. trichostyla* Bisch., Del. Sem. Hort. Heidelb. 1847 et Am. Sc. Nat., Ser. 3, 9, 319, 1848 per specim. ex seminibus texanis a Lindheimer lectis eductum con-

stituta est: specim. verum in herb. horti bot. Missour. vidi. — *S. Earlei* Wooton et Standley in Contrib. U. S. Natl. Herb. 16. 169, 1913 per specimen in New Mexico ad Roswell ab Earle (no. 375) lectum constituta est; typum in herb. Smithson., isotypos complures vidi.

Herba perennis altitudine ad 1 m et ultra, caulibus e caudice lignoso ascendentibus superne pilis brevissimis appressis incanis: foliorum laminis plerumque 4—8 cm longis. latitudine variis 3—50 mm latis, maximam partem ovato-lanceolatis vel oblongo-lanceolatis, in formis occidentalibus saepius lineari-lanceolatis interdum anguste ellipticis. in apice obtusiusculis, in basi ad petiolos 1—4 cm longos cuneato-angustatis, marginibus formarum platyphyllarum dentato-serratis, leptophyllarum integris paginis ambabus glabratis; floribus 12 et ultra in verticillastris bracteis caducis subtentis, glomerulis globosis in spicis farinaceis 15—30 cm approximatis, infimis saepe remotis; calycibus florentibus 5—8 mm longis extus pilis brevibus mollibus appressis dense farinaceo-tomentellis, labia superiore imprimis 3-venia, ore subtruncato; corollarum tubo 6—9 mm longo, labia superiore 3—6 mm alta.

S. trichostyla is purely synonymous with *S. farinacea*. coming from essentially the same region. *S. Earlei*, however, is the name applied to the western forms, which have mostly narrow entire leaves. These occur generally in the western half of the state. In the intermediate region. at least in the vicinity of Austin, Dallas and Kerrville, they occur with typical forms. They differ from the eastern broad-leaved forms only in leaf-shape and sometimes smaller corolla. There is, however, no clear line of demarcation either geographically or morphologically. They represent an ecotype in all likelihood, but since the species is perhaps formed of several such, to judge from the variation in cultivated specimens, it has seemed preferable not to attempt their segragation on the basis of herbarium material. Berlandier's specimen has leaves 5—6 mm broad.

New Mexico: Chaves, Eddy. — Texas: Reeves, Pecos. Crockett, Sutton, Val Verde, Tom Green, Edwards. San Saba, Gillespie, Travis. Runnels, Nolan, Shackelford. Callahan, Kerr, Dallas, Ellis, Willbarger, Tarrant. Williamson, Waller, Hays, Comal, Bexar, Wilson, Uvalde, Goliad.

243. **S. lanicalyx** Epling sp. nov. per specim. in Mexico prov. Coahuila in Sierra de Paila a Purpus (no. 4754) lectum constituta est; typum in herb. Univ. Calif. (Berkeley) vidi.

Herba perennis bella, caulibus e caudice lignoso 40—50 cm ascendentibus ubique pilis minutissimis hirtellis et inter flores

breviter pubescentibus; foliorum laminis 3—5 cm longis ovato-lanceolatis, in apice obtusiusculis, in basi ad petiolos 1—2,5 cm longos cuneato-angustatis, marginibus irregulariter serratis interdum subintegris, paginis ambabus glabratis minutissime hirtellis, floribus 3—6 in verticillastris bracteis caducis subtentis, glomerulis globosis inter se 1—4 cm distantibus, in spicis moniliformibus gracilibus 15—20 cm longis paniculatis dispositis; calycibus florentibus extus caeruleo-lanatis 4,5 mm longis, in maturitate 6 mm longis, ore subtruncato; corollarum tubo 5 mm longo, infra medium invaginato, labia superiore 3.5 mm alta.

While this plant resembles *S. farinacea* strongly in foliage and habit, the differences in pubescence (which is very constant in *S. farinacea*) and inflorescence, as well as the smaller flowers, seem to justify recognition. The hairs are of a different order and much finer.

Mexico: Coahuila: in Sierra de Paila.

244. **S. azurea** Michx. ex Lam., Journ. Hist. Nat. 1, 409, 1792 et in Vahl, Enum. 1, 253, 1804.

Herba perennis mutabilis altitudine ad 1 m et ultra, caulibus plerumque simplicibus ad apices frequenter ramosis vel glabris inter flores glanduloso-puberulis vel hirtis brevibus nisi inter flores appressis vestitis; foliorum laminis maximam partem 4 ad 10 cm longis, 2—40 mm latis, vel ellipticis vel lanceolatis marginibus serratis saepe linearibus integris, in apice plerumque acutiusculis, in basi ad petiolos 0,5—1 cm longos angustatis, paginis ambabus vel glaberrimis vel pubescentibus; floribus 1—12 et ultra in verticillastris bracteis vel perstatis vel deciduis subtentis, glomerulis vel remotis vel approximatis in spicis interruptis vel congestis saepe paniculatis dispositis; calycibus florentibus 4,5 ad 7,5 mm longis plerumque appresso-hispidulis interdum fere glabris labiis subaequilongis circiter 1 mm longis, superiore 5—7-venia saepius paulo breviore, frequenter paulo longiore; corollarum caerulearum interdum albarum 7,5—12 mm longo, labia superiore 4—6 mm alta; ovulis glanduloso-punctulatis.

S. azurea gives the impression of a polymorphic complex which is segregating both geographically and morphologically but in which the segregates are as yet poorly defined. As is frequently the case with *Labiatae*, the extreme forms geographically are often most similar, at least superficially. Accordingly, the linear-leaved glabrate forms of subsp. *Pitcheri* found in Texas resemble similar forms of subsp. *typica* as found on the eastern litoral. The single characteristic which is most reliable for segregation of the eastern and western forms is the pubescence of the stems.

whether retrorse or ascending. Yet even here there are exceptions. Collections made at Norman, Oklahoma, are essentially subsp. *Pitcheri* in all but pubescence, which is of both types in the same collection. At the same time, collections made in Oronogo and Eagle Rock, Missouri, while resembling subsp. *media* in habit and having the long trichome frequently associated with that subspecies, have retrorse pubescence. Specimens of subsp. *media* from northeastern Texas, while having the pubescence of subsp. *media* resemble the linear-leaved forms typical of Texas. It will be noted that these variants are all intermediate geographically. The form of leaf, whether narrow and entire, or broad and serrate, varies greatly within each subspecies and within many given localities. It seems probable that each subspecies as here proposed is composed of more than one ecotype. The persistence of small forms in cultivation suggests this conclusion.

Plantae civit. conjunc. Americae
Pili caulis appresso-ascendentes interdum subnulli
Folia pubescentia plerumque elliptica . . . subsp. *media*
Folia glabra plerumque lanceolata vel linearia . . . . subsp. *typica*
Pili caulis appresso-retrorsi . . . . subsp. *Pitcheri*
Plantae mexicanae (Nuevo Leon), pili caulis brevissimi plus minusve retrorsi; folia solum ad venas hispidula . . . . subsp. *mexicana*

Subsp. **typica** Epling subsp. nov. per specim. Lamarkianum constituta est. — *S. acuminata* Vent., Hort. Cel. 50. t. 50. 1800 per specim. cultum constituta est. — *S. acuminatissima* Vent., loc. cit. — *S. angustifolia* Michx., Fl. Bor. Am. 1, 15, 1803 per specim. in Georgia a Michaux lectum constituta est; typum in herb. Paris. vidi (no Salisb., Prod. 73, 1796). — *S. elata* Poir., Encycl. 6. 625, 1804 per specim. cultum constituta est; specim. verum in herb. Paris. vidi.

Caulibus glabris nisi superne hirtis brevibus ascendentibus sparse vestitis; foliorum laminis vel lanceolatis vel linearibus, serratis vel integris latitudine maximam partem 4—15 mm. paginis ambabus glabris; floribus saepius 3—6 in vertillastris, bracteis saepe perstatis subtentis, glomerulis circiter 1 cm distantibus in paniculis gracilibus dispositis; calycibus extus praesertim ad basim hispidulis interdum utrimque hirtellis.

The chief variation within this subspecies lies in the width of leaf and its serrations. As a rule, the broader forms are serrate, the linear forms entire. Since both frequently occur in the same locality, they are difficult of segregation. The predominant

form in Florida is the narrow, entire-leaved form. It apparently does not occur west of Georgia. It frequently throws albino flowers.

Louisiana: Calcasieu. — Mississippi: (Bayou Porto). — Georgia: Gwinnett, Richmond. Bibb, Berrien. — Florida: Duval, Lee, Gulf. Liberty. Columbia. Citrus Bay, Levy, Orange. — Alabama: Dale, Lee, Mobile, Macon. — South Carolina: Lexington, Richland, Aiken. — North Carolina: Richmond.

Subsp. **mexicana** Epling subsp. nov. per specim. in Mexico prov. Nuevo Leon in descensu ad Banco de Santa Ana ad Galeana in querceto-pinetis a Mueller (no. 857) lectum constituta est; typum in herb. Univ. Calif. (Los Angeles) vidi.

Caulibus 40—60 cm longis fere glabris pilis minutissimis plus minusve retrorsis superne conspersis; foliorum laminis magnam partem ellipticis liguliformibus 2—8 cm longis subintegris, in apice obtusiusculis in basi ad petiolos graciles 3—10 mm longis angustatis; floribus saepius 3—6 in verticillastris bracteis vel perstatis vel deciduis subtentis, glomerulis inter se 1—2 cm distantibus saepius simplicibus; calycibus praesertim ad venas hispidulis.

In habit this form more nearly resembles subsp. *media* but is nearly glabrous. There is a considerable latitude in leaf size and habit in the specimens now available.

Mexico: Nuevo Leon: in regione Galeana: in silva circa Cieneguillas et Banco de Santa Ana; supra Puertos, El Certado, in pinetis; Taray prope Pablillo, 2100—2200 m in querceto aperto.

Susbsp. **media** Epling subsp. nov. per specim. in Georgia prope Rome a Chapman lectum constituta est; typum in herb. Smithson. vidi.

Caulibus utrimque pilis ascendentibus minusve hirtellis, interdum infimo pilis longioribus crassioribus extensis conspersis; foliorum laminis maximam partem ellipticis 10—35 mm latis saepius serratis rarius integris, paginis ambobus plus minusve pubescentibus; floribus saepius 6 et ultra in verticillastris bracteis saepius deciduis subtentis, glomerulis approximatis tamen in spicis interruptis dispositis; calycibus sat hispidulo-pubescentibus.

The principal variations within this subspecies lie in breadth of leaf and in the frequent production of stiff spreading hairs scattered over the lower parts of the stem. These sometimes occur in subsp. *typica*. The examples from Cleveland County, Oklahoma and Comal County, Texas, are similar in pubescence to subsp. *media*, but are otherwise scarcely separable from forms of subsp. *Pitcheri*. The former collection exhibits both types of pubescence.

Alabama: Barbour, Wilcox, Blount, Madison. — Louisiana: Caddo, Natchitoches, Bossier. — Mississippi: Clarke, Lowndes. — Georgia: Chattooga, Jasper. — Arkansas: Garland, Hempstead. — Missouri: Jasper. — Texas: Wood, Gregg, Upshur. — Oklahoma: Cleveland.

Subsp. **Pitcheri** Epling subsp. nov. per *Salviam Pitcheri* Torr. ex Benth., loc. cit., constituta est. — *S. Pitcheri* Torr. ex Benth., Lab. Gen. et Sp. 251, 1833 per specim. in Arkansas a Pitcher lectum constituta est; typum in herb. Kew., isotypum in herb. horti bot. nov. Eborac. vidi. — *S. longifolia* Nutt. in Trans. Am. Phil. Soc. N. S. 5. 185. 1837 per specim. in Arkansas prope Ft. Smith a Nuttall lectum constituta est; specimina Nuttalliana in herb. Acad. Philad. et horti bot. Oxon. vidi. — *S. coriifolia* Scheele, in Linnaea 22, 587. 1839 per specim. e seminibus texanis a Lindheimer lectis eductum constituta est; specim. verum in herb. horti bot. Missouri. vidi. — *S. azurea* var. *grandiflora* Benth. in DC. Prodr. 12, 302, 1848 per specim. e seminibus Nuttallianis (*S. longifolia*) eductum constituta est; typum non vidi.

Caulibus utrimque pilis retrorsis nisi inter flores appressis vestitis rarius glabris; foliorum laminis vel ellipticis vel lanceolatis marginibus serratis, paginis ambabus plus minusve pubescentibus nonnullis linearibus glabratis integris; floribus 6—12 et ultra in verticillastris bracteis saepius deciduis subtentis; glomerulis frequenter globosis in spicis interruptis congestis etiam cylindratis confertissimis dispositis; calycibus saepius dense pubescentibus; corollarum tubo crassiore paulo longiore.

The principal variations within this subspecies lie in the width, serration and pubescence of the leaves, and the degree of crowding in the inflorescence. *S. coriifolia*, which is confined largely to Texas is an extreme form, approaching subsp. *typica* in many ways, with linear, more or less glabrate leaves and an inflorescence of interrupted spikes. The pubescence and the number of flowers in the glomerule, however, are those of subsp. *Pitcheri*. *S. longifolia* is more or less intermediate. The flower size of this subspecies is somewhat greater, but scarely definable. A specimen of Parrys is labelled "headwaters of Clear Creek" Colorado and specimens of Lettermans are labelled "Denver". I have seen no other material from Colorado. The subspecies has apparently been introduced into Kentucky near Kevil.

Nebraska: Lancaster, Saline, Nuckolls, Douglas, Kearney, Saunders. — Missouri: Greene, Jackson, Jaspar, Cass, Ozark, Randolph, Barry, Taney, Newton, Benton. — Kansas: Riley, Johnson, Shawnee, Sedgwick, Graham, McPherson, Miami, Rocks, Leavenworth, Reno, Salina. — Oklahoma: Grant.

Woods, Kiowa, Creek, Woodward, Comanche. Payne, Kingfisher. — Arkansas: Benton, Saline, Hempstead, Pulaski. — Texas: Parker, Wichita, Dallas, Tarrant, Fayette, Comal, Colorado, Bowie, Matagorda, Lamar, Rusk, Gillespie, Palo Pinto, Hemphill, Willbarger, Montgomery, Comanche, Walker, Harris, Johnson, Bosque, Cass, Kerr, Bell, Cooke, Pecos.

245. **S. leptophylla** Benth., Lab. Gen. et Sp. 249. 1833 et in DC. Prodr. 12, 299, 1848 per specimina in Mexico a Mociño et Sessé olim in herb. Lamb. et Karwinski in herb. Monac. lecta constituta est; specim. Lambertianum verisimiliter perditum non reperire potui: specim. Karwinskii in herb. Monac. et Mocinoi in herb. horti bot. Matrit. vidi. — *S. angustifolia* Cav., Icones 4, 9, t. 317. 1797 per specim. e seminibus mexicanis verisimiliter a Mociño et Sessé lectis eductum constituta est; specimina vera in herb. Jussieu. et Ventenat. vidi (non *S. angustifolia* Salisb. Prodr. 1796). — *S. virgata* Ort., Hort. Matr. Dec. 3, 1797 per specim. e seminibus mexicanis a Mociño et Sessé lectis eductum constituta est; non typum sed specim. verum in herb. Mus. Par. vidi (non Ait. Hort. Kew. 1, 39, 1789). — ? *S. reptans* Jacq., Hort. Schoenbr. 3, 38, 1798 per specim. e seminibus mexicanis eductum constituta est; typum non reperire potui. — *S. linifolia* Mart. et Gal. in Bull. Acad. Brux. 11. II. 70. 1884 per specim. in Mexico prov. Michoacan in Sierra de Quinceo a Galeotti (no. 694) lectum constituta est; typum in herb. Mus. Brux. vidi. — *S. angustifolia* var. *glabra* Gray. Syn. Fl. 2. 369, 1878 per specim. a Wright (no. 468) lectum constituta est; typum in herb. Gray vidi. — *S. linearis* Sessé et Moc., Fl. Mex. ed. 2. 6. 1894; specimen ex herb. horti Matrit. vidi.

Herbae perennes altitudine ad 1 m caulibus e caudice lignoso ascendentibus vel omnino glabris vel pilis extensis setosis, inter flores plus minusve puberulis; foliorum laminis linearibus 2—8 cm longis, 1,5—5 mm latis, magnam partem integris, rarius remote serrulatis, saepius fasciculatis habitu *Galii* modo glabris modo pilis extensis setosis nullomodo glandulosis raro sparse hispidulis; floribus 1—3 in verticillastris bracteis deciduis interdum perstatis subtentis, in spicis interruptis gracilibus 15—30 cm longis dispositis, glomerulis inter se 1—4 cm distantibus; calycibus florentibus vel glabris vel hispidis, labiis subaequilongis, 2—3 mm longis, superiore 7-veniis; corollarum tubo 7—11 mm longo, ad basim plus minusve angustato vix tamen invaginato, intus modo nudo modo papillis binis parvis ornato, labia superiore 3,5—4,5 mm alta.

This species exhibits two forms and is very closely allied to *S. heterotricha*. Both are close to the linear leaved forms of *S.*

azurea. The first of the forms of *S. leptophylla*, found principally in the states of Mexico, Michoacan, Puebla and Jalisco, is usually setose, with papillate corolla tubes. The leaves are generally shorter and narrower and the plant has a decided aspect of *Galium*. This is *S. leptophylla* (Mociño and Sessé), *S. linearis*, *S. angustifolia* and *S. virgata*. Elsewhere in its range, including the Texan plants, the leaves tent to be more elongate, and flaccid (as seen dried), the plants are mostly glabrous and the corolla tubes are generally epapillate. This is var. *glabra* of Gray and *S. leptophylla* (Karwinski's specimen). The Texan plants are almost identical with those found in Jalisco by Palmer (no. 226) and by Hartweg (no. 163) either in Aguas Calientes or Zacatecas. *S. linifolia* is similar to *S. angustifolia*. It should be added that while there appears from the present evidence to be some correlation between the flaccid glabrous plant and the epapillate corolla tube, exceptions occur and that frequently both glabrous and setose forms may be found in the same collection. In the typical form there seems to be a tendency for the young shoots to have broader leaves which are usually serrate and even canescent with bristles. The variety may bear two kinds of trichomes on the calyces, either those similar to the typical, but much shorter, or, in some cases, finer ones. I have adopted Bentham's name in preference to Jacquin's since there is no assurance of the identity of the latter. It might be *S. heterotricha* or even *S. unicostata*.

Mexico: Hidalgo: Regla, 2200 m; Zacatecas: Plateado; Mexico: Hacienda de la Encarnacion; Tultenango; Temascaltepec. Volcan, 1380 m; Tizapam; Santa Fe, 2600 m; Puebla: Puebla, 2270 m; Michoacan: Tlalpuhajua; Serra Quinceo; Morelia, 2000 m; Tzintzuntzan; Patzcuaro; Jalisco: Guadalajara; La Quemada. 1300—1320 m; Ocotlan; Oaxaca; Chiapas: Tuxtla, 800—900 m: Jiquipilas, 700—900 m; Ocuilapa. 1100—1200 m.

var. *glabra* Gray: Texas: Jeff Davis: Limpia Canyon, Ord Mts. — Mexico: San Luis Potosi: in arenosis ad oppidum: ? Aguascalientes vel Zacatecas; — Guatemala: Huehuetenango: Chacula, 1600 m, Suchitan pr. Santa Catarina Mita.

246. **S. heterotricha** Fern. in Proc. Am. Acad. 35, 500, 1900 per specim. in Mexico prov. Jalisco prope Rio Blanco a Palmer (no. 53) lectum constituta est; typum in herb. Gray. vidi. — *S. heterotricha* var. *multinervia* Fern., l. c. p. 501, per specim. in Mexico prov. Nayarit inter Acaponeta et Pedro Paulo a Rose (no. 1934) lectum constituta est; typum in herb. Smithson. vidi.

Herba perennis 40—50 cm altitudine caulibus frequenter ramosis e caudice lignoso ascendentibus, praesertim superne pilis longioribus glandulosis extensis setosis caeterum nisi inter

flores minute puberulis omnino glabris; foliorum laminis linearibus vel lineari-oblongis 3—6 cm longis, 2—9 mm latis, integris, utrimque glabris nisi pilis glandulosis sparse conspersis; floribus 1—3 in verticillastris bracteis deciduis rarius perstatis subtentis, glomerulis inter se 1—4 cm distantibus, in spicis interruptis 8—20 cm longis dispositis; calycibus florentibus 7—9 mm longis, extus pilis extensis glandulosis conspicue conspersis caeterum glabris, labiis 2—3 mm longis, superiore 5—7-venis; corollarum tubo 6,5—7,5 mm longo, crasso, intus nudo, ventricoso, labia superiore 4—7 mm alta.

Similar to *S. leptophylla* and closely allied to it, differing primarily in the more branched habit with shorter less virgate spikes, the glandular setae and the thicker, more ventricose corolla tubes.

Mexico: Jalisco: Rio Blanco; Guadalajara; Nayarit: inter Acaponeta et Pedro Paulo.

247. **S. oblongifolia** Mart. et Gal. in Bull. Acad. Brux. 11, II, 79, 1844 per specim. in Mexico prov. Oaxaca in Sierra de San Felipe a Galeotti (no. 660) lectum constituta est; typum in herb. Mus. Brux. vidi.

Herba perennis, radicibus in tubera globosa incrassatis, caulibus paucis gracilibus e caudice tuberoso parvo ascendentibus 30—60 cm altis superne praesertim inter flores pilis parvis extensis glandulosis viscidis; foliis plerumque ad basim positis, laminis elliptico-obovatis 2—5 cm longis, in apice obtusis, in basi in petiolos 3—6 mm longos acuminatis, marginibus supra medium crenato-serratis, paginis ambabus glabris nisi subtus ad venas sparsissime hirtellis; floribus 3—6 in verticillastris bracteis caducis subtentis, in spicis interruptis laxis longe pedunculatis in toto 15—30 cm longis dispositis, glomerulis demum inter se 2—6 cm distantibus; calycibus florentibus 6—6,5 mm longis extus glanduloso-hispidulis, labia superiore 7-venia quam inferior paulo longiore; corollarum caerulearum tubo 7,5—9 mm longo, intus nudo, labia superiore 4—4,5 mm alta, inferiore duplo longiore.

Mexico: Oaxaca: Sierra de San Felipe, 2800 m, in pinetis; Chiapas: San Cristobal, 2200—2900 m.

47. Sect. **Malacophyllae.**

Frutices, suffrutices vel herbae perennes foliis ovatis praesertim subtus molliter pubescentibus rarius glabratis vix pilis brevissimis appressis hirtellis; bracteis caducis vel perstatis (*S. sophronae*); calycum labia superiore 5—7-venia rotundato-mucronata tubo extus pilis extensis vel crispulis nullomodo appresso-farinaceis

sparse vestito; staminum jugo ad connexum in dentem retrorsum dilatato; stylo piloso. Plantae andinae; species typica est *S. malacophylla*.

Folia maximam partem 2—4 cm longa
  Calyces florentes 8—9 mm longi; bracteae perstatae . . . . 251. *S. sophrona*
  Calyces florentes 4—6 mm longi; bracteae deciduae
    Folia ovato-lanceolata petiolis 3—5 mm longis elata . . . . 252. *S. tiraquensis*
    Folia ovata petiolis 6—12 mm longis elata
      Folia glabrata . . . . 248. *S. loxensis*
      Folia subtus molliter pubescentia . . . 249. *S. malacophylla*
Folia maximam partem 4—8 cm, etiam 15 cm longa
  Corollarum tubi 5,5—7 mm longi: folia magnam partem 4—8 cm longa
    Frutex foliis utrimque fere glabris viridibus, calycibus extus pilis subcrispulis nullomodo glandulosis et glandulis sessilibus conspersis; calycum labia superior 7-venia . . . . 250. *S. platystoma*
    Herba perennis foliis subtus cinereo-pubescentibus interdum glabratis, calycibus extus pilis extensis plus minusve glandulosis vestitis; calycum labia superior 5-venia . . . . 253. *S. rypara*
  Corollarum tubi 9—18 mm longi; folia magnam partem 8—15 cm longa
    Corollarum tubi (7—) 9—10 mm longi . 254. *S. stachydifolia*
    Corollarum tubi 11—18 mm longi . . . 255. *S. rhinosina*

248. **S. loxensis** Benth., Pl. Hartweg 145, 1844 per specim. prope Loja in Ecuador a Hartweg (no. 805) lectum constituta est; typum in herb. Kew., isotypos in herb. Mus. Par., Vindob. et Berolin. vidi.

Herba perennis ramis gracilibus ascendentibus sparse pubescentibus; foliorum laminis 2—4 cm longis, 1,5—2,5 cm latis, ovatis, vel obtusis vel breviter acuminatis, in basi rotundatis, margine convexiore serrato, paginis ambabus praecipue ad venas sparse hirtellis subglabris, petiolis 8—12 mm longis elatis; floribus 3—6 in verticillastris bracteis 3—4 mm longis deciduis ovato-acuminatis, glabris bracteolisque ellipticis subaequilongis subtentis, glomerulis inter se 3—8 mm distantibus, in spicis subsecundis confertis, etiam in paniculis dispositis; calycibus florenti-

bus 5—6 mm longis, extus fere glabris et glandulis sessilibus conspersis, in maturitate paulo auctis, labia superiore fere 3 mm longa rotundato-truncata mucronata, inferioris laciniis acuminatis subaequilongis; corollarum tubo 6 mm longo intus nudo subcylindrato, labia superiore erecta, 3,5 mm alta, inferiore subrotunda 4,5 mm diametro. lacinia media emarginata.

Ecuador: Loja.

249. **S. malacophylla** Benth. in DC., Prodr. **12**, 312, 1848 per specim. in Peruviae prov. Amazonas ad Sesuya a Mathews (no. 3156) lectum constituta est; typum in herb. Kew., isotypum in herb. Mus. Stockh. et Univ. Calif. (Los Angeles) vidi. — ? *S. mitis* R. et P., Fl. Peruv. **1**. 27. 1798 per specim. in Peruviae prov. Lima in praeruptis calidis ad Obrajillo a Ruiz et Pavon lectum constituta est; typum non vidi.

Herba perennis altitudine ut videtur ad 50 cm, ramis gracilibus ascendentibus pilis extensis villosulis superne glandulosis; foliorum laminis 2,5—4 cm longis, 12—24 mm latis, ovatis, acutis, in basi rotundatis, margine crenato-serrato, pagina superiore sparse hirtella interdum subglabra, inferiore incano-pubescente, petiolis 5—10 mm longis pubescentibus elatis; floribus 3—6 in verticillastris bracteis 2—3 mm longis ovatis caducis subtentis, glomerulis inter se 1—3 cm distantibus in spicis interruptis laxis 15 ad 20 cm longis dispositis; calycibus florentibus 4,5 mm longis, extus glanduloso-hispidulis, in maturitate 6,5 mm longis, labia superiore submucronata, inferioris laciniis breviter acuminatis, pedicellis 3—4 mm longis elatis; corollarum tubo 5 mm longo vix ventricoso intus nudo, labia superiore 3 mm alta, inferiore 5 mm diametro.

Peruvia: Amazonas: ad Chachapoyas prope Sesuya.

250. **S. platystoma** Epl. in Rep. Spec. Nov., Beiheft **85**, 81, 1935 per specim. in Boliviae prov. Cochabamba prope Cochabamba a Holway (no. 386) lectum constituta est; typum in herb. Smithson., isotypum in herb. Gray. vidi.

Frutex ramulis sparse pubescentibus mox glabris; foliorum laminis anguste ovatis 3—8,5 cm longis, 1,5—5 cm latis, in apice acutis, in basi rotundatis interdum subtruncatis. margine serrato, paginis ambabus sparse hirtellis, petiolis 5 ad 15 mm longis elatis; floribus circiter tribus in verticillastris bracteis caducis 3—5 mm longis subtentis, glomerulis inter se 0,5—1,5 cm distantibus in spicis interruptis laxis 8—12 cm longis dispositis; calycibus florentibus 6—7 mm longis extus praesertim ad venas hispidulis et glandulis sessilibus conspersis. in maturitate 8—9 mm longis, pedicellis 3—5 mm longis elatis, labiis hiantibus, superiore rotundata mucronata, inferioris laciniis

late ovatis acuminatis; corollarum caerulearum tubo 5,5—6 mm longo ventricoso intus nudo, labia superiore 4,5 mm alta, inferiore 6—7 mm longa.

Bolivia: Cochabamba.

251. **S. sophrona** Briq. in Bull. Herb. Boiss. 4, 854, 1896 per specim. in Bolivia prope Tunari a Kuntze lectum constituta est; typum in herb. hort. bot. Nov. Eborac. vidi.

Herba perennis altitudine ad 40 cm, caulibus in basi procumbentibris praesertim superne pubescentibus; foliorum laminis 1,5—3 cm longis, 1—2 cm latis, ovatis, obtusis, in basi rotundatis, margine serrato, 1—1,5 mm latis, paginis ambabus sparse hirtellis, petiolis 1—3 mm longis elatis; floribus circiter tribus in verticillastris bracteis perstatis ovato-acuminatis 6 ad 8 mm longis subtentis, glomerulis inter se 0,5—2 cm distantibus; calycibus florentibus 8—9 mm longis, extus hirtellis, in maturitate 10—11 mm longis, labiis rotundatis obtusis, pedicellis 3 mm longis elatis; corollarum tubo 8—9 mm longo ventricoso, intus nudo, labia superiore 5 mm alta, inferiore 8—9 mm longa.

Bolivia: Tunari, 3000 m.

252. **S. tiraquensis** Briq. in Bull. Herb. Boiss. 4, 851, 1896 per specim. in Bolivia prope Tiraqui a Kuntze lectum constituta est; typum in herb. Delessert., isotypum in herb. horti bot. Nov. Eborac. vidi.

Herba perennis altitudine 15—20 cm, caulibus superne ramosis pilis extensis hirtellis frequenter glandulosis; foliorum laminis anguste ovatis vel ovato-lanceolatis plerumque 2—3 cm longis, 6—12 mm latis, in apice acutis vel acuminatis, in basi rotundatis, petiolis 3—5 mm longis elatis, margine serrata, paginis ambobus hirtellis fere glabris; floribus tribus in verticillastris bracteis caducis subtentis, in racemis 3—8 cm longis dispositis, glomerulis inter se 1—2 cm distantibus, pedicellis 2—3 mm longis elatis; calycibus florentibus 5—6 mm longis extus pilis extensis brevibus glandulosis sparse pubescentibus in maturitate 7—8,5 mm longis, labia superiore rotundata 5-venia, inferioris laciniis subaequilongis divergentibus late ovatis mucronatis; corollarum caerulearum tubo 4,5—5 mm longo intus glabro labia superiore 3,5—4 mm alta concava, inferiore subrotunda 6—8 mm diametro.

Bolivia: Tiraqui: in Sierra Santa Cruz; Sucre: Cinti: Puco Khasa prope Tacaquira.

253. **S. rypara** Briq. in Bull. Herb. Boiss. 4, 851, 1896 per specim. in Bolivia prov. Santa Cruz in Sierra Santa Cruz a Kuntze lectum constituta est; typum in herb. horti bot. Nov. Eborac. vidi. — *S. rhombifolia* var. *ovata* Griseb., Symb. Fl. Arg. 273, 1879 per specim. in Argentinae prov. Salta prope San Jose

a Lorentz et Hieronymus (no. 218) lectum constituta est; typum in herb. Univ. Goett. vidi. — *S. tiraquensis* Epl. in Fedde. Rep., Spec. Nov., Beiheft **85**, 82, 1935 (partim).

Herba perennis altitudine ad 1 m et ultra caulibus gracilibus superne ramosis plus minusve villosulis et pilis brevibus glandulosis conspersis; foliorum laminis ovatis rarius ovato-lanceolatis magnam partem 5—8 cm longis, petiolis villosulis 5—20 mm longis elatis, in apice acutis vel acuminatis, in basi rotundatis rarius subtruncatis, margine acute serrato, paginis ambabus molliter villosulis, inferiore saepius incana vel cinerea; floribus 3—6 in verticillastris bracteis parvis ovatis saepius caducis rarius tarde deciduis subtentis, in spicis interruptis 8—12 cm longis dispositis; calycibus florentibus 5—6 mm longis extus villosulis et plus minusve glandulosis, in maturitate circiter 7 mm longis; corollarum tubo 4,5—5 mm longo, labia superiore 3,5 mm alta, inferiore duplo longiore.

Argentina: Jujuy; Rio Grande; Salta; San Jose; Oran; ad Rio Piedras; Embarcacion; La Viña; Pampa Grande; Tucuman: Tafi de Valle, Yerba Buena, 600 m; in Sierra Tucuman prope Siambon; Cuesta del Garabatal inter Juntas et Siambon; in Cerro del Campo, Burruyacu, 900 m; Tafi: Naranjal a San Javier; Capital, Rio Sali; Tafi Viejo; Capital, El Duranzinto, 550 m. — Bolivia: Sine loco, 1847, Bridges; prope Tarija in loco umbroso in dumetis.

254. **S. stachydifolia** Benth. in DC., Prodr. **12**, 311, 1848 per specim. in Boliviae prov. Chuquisaca a D'Orbigney (no. 1281) lectum constituta est; typum in herb. Kew., isotypos in herb. Mus. Par., Bruxell. et Univ. Calif. (Los Angeles) vidi. — ? *S. Matico* Griseb. in Goett. Abh. **19**, 274, 1874 (Pl. Lorentz.) per specim. in Argentinae prov. Tucuman prope Cienaga et Tafi a Lorentz (no. 111) lectum constituta est; typum in herb. Univ. Goett. vidi. — ? *S. Matico* var. *cuneata* Griseb., loc. cit., per specim. in Argentinae prov. Tucuman prope La Cienaga a Lorentz et Hieronymus lectum constituta est; typum in herb. Univ. Goett. vidi.

Herba perennis vel suffrutex altitudine ad 1,5 m, ramis superne villosulis etiam sublanatis; foliorum laminis mediis 6—12 cm longis, 4—6 cm latis, maximam partem ovatis interdum subcordatis, in apice leniter acuminatis rarius obtusis, in basi nunc pulchre rotundatis nunc truncato-subcordatis, margine serrato, pagina superiore molliter hirsuta, inferiore molliter cinereo-pubescente, praesertim juvenilium frequenter subincana, ambabus interdum subglabris, petiolis 1—2,5 cm longis elatis; floribus 6—12 et ultra in verticillastris bracteis ovato-acuminatis tarde deciduis 3—10 mm longis subtentis, glomerulis nunc confertis nunc inter se 0,5—4 cm distantibus in spicis subcylindratis vel interruptis saepe paniculatis

dispositis; calycibus florentibus extus praesertim ad venas hirsutis 7—10 mm longis, in maturitate paulo auctis 10—12 mm longis, pedicellis 3—6 mm longis elatis, labia superiore rotundata mucronata 2,5—4,5 mm alta, inferioris laciniis infra medium connatis; corollarum caerulearum tubo (7—) 9—10 mm longo intus nudo sub labiam inferiorem ventricoso, labia superiore 5—6 mm alta, inferiore duplo longiore 8—10 mm lata.

In foliage, pubescence and conformation of the flowers *S. Matico* var. *cuneata*, *S. Matico*, *S. rhinosina* var. *arborescens* and *S. rhinosina* are similar, and judged on the basis of scant and unsatisfactory herbarium specimens, appear to form the modes of a continuous series in the order named, with corolla tubes ranging from 7—18 mm in length. However, the scant information available regarding their growth forms suggests a very different arrangement, for the type of *S. Matico* is an herb about 70 cm tall with fleshy tuber-like roots 2—3 cm long, while *S. rhinosina* var. *arborescens* is said to become a small tree 5—6 m tall. Until more evidence is at hand I have retained Grisebach's tentative arrangement, but consider *S. Matico* a synonym of *S. stachydifolia* to which it is remarkably similar. As far as known, the distribution of the four forms only adds to the perplexity of the matter.

Bolivia: Prov. Chuqiusaca; in regione Tomina; Tarija: prope Tambo in via Villa Montes, in angustiis saxosis dumetosis. — Argentina (*S. matico*): Tucuman: Cuesta del Garrabatal inter Juntas et Siambon; in Sierra de Anconquia, 7000 ped.; prope Cienaga et Tafi; Burroyaca, Alto de Medina; Tafi, Questo San Javier. — The following represent Grisebach's variety which is similar, save in the smaller flowers: Cienaga; La Quenoa; Chicligasti, Estancia Santa Rosa.

255. **S. rhinosina** Griseb. in Goett. Abh. **79**. 272. 1874 (Pl. Lorentz.) per specim. in Argentinae prov. Catamarca in montibus alpestribus Granadillas dictis a Lorentz (no. 571) lectum constituta est; typum in herb. Univ. Goett. vidi.

Frutex altitudine 2 m et ultra ramis herbaceis sparse villosis; foliorum laminis mediis 8—10 cm longis, 5—6 cm latis, ovatis, in apice acuminatis, in basi rotundatis, margine serrulato, pagina superiore hirtella, inferiore praesertim ad venas cinereo-pubescente, petiolis 2—4 cm longis elatis, floribus 6—12 in verticillastris bracteis ovatis membranaceis acuminatis caducis 8—16 mm longis subtentis, glomerulis inter se 1—2 cm distantibus in spicas sat densas approximatis; calycibus florentibus 10—15 mm longis, ad venas hirtellis fere glabris saepe caeruleis, in maturitate 15—17 mm longis, pedicellis 4—6 mm longis elatis, labia superiore rotundata mucronata, 5 mm alta, inferioris laciniis infra medium connatis;

corollarum caerulearum tubo 12—18 mm longo intus nudo sub labiam inferiorem ventricoso, labia superiore 5—6 mm alta, inferiore duplo longiore 15—16 mm lata.

Argentina: Catamarca: Negrilla; in valle montium alpestrium Granadillas dictis; Yakutula.

var. **arborescens** Griseb., l. c., per specim. in Argentinae prov. Tucuman in valle fluminis inter Juntas et Anfama a Lorentz (no. 417) lectum constituta est; typum in herb. Univ. Goett. vidi.

Frutex vel arbor parva altitudine ad 6 m, foliis ovatis longitudine ad 20 cm (? et ultra) in basi interdum oblique cordatis; calycibus 9—12 mm longis; corollarum tubo 11—13 mm longo, genitalibus paulo minoribus.

Argentina: Tucuman: Anfama; in valle fluminis inter Juntas et Anfama. — ? Catamarca: prope Andalgala, 6. II. 1916, Jörgensen 1167: — ? Jujuy: prope Tumbaya, 21. II. 1927, Venturi 4956.

48. Sect. **Flavidae.**

Subsect. *Flavidae* Epl. in Rep. Spec. Nov., Beiheft 85, 96, 1935; species typica est *S. decurrens*.

Herbae perennes foliis sat amplis membranaceis: floribus 3 in verticillastris bracteis deciduis subtentis, in spicis brevibus interruptis dispositis; calycum labia superiore 5-venia; corollarum flavidarum tubo ventricoso ad basim valde invaginato intus tamen nudo, labia inferiore quam superior longiore: staminum gubernaculo dente retrorso ornato; stylo pubescente. Species una brasiliana: *S. decurrens*.

256. **S. decurrens** Epl. in Rep. Spec. Nov.. Beiheft 85, 96, 1935 per specim. in Brasiliae prov. Minas Geraes? prope Caldas a Regnell (no. III, 1933) lectum constituta est; typum in herb. Mus. Stockh., isotypum in herb. Smithson. vidi.

Herba perennis altitudine 60—80 cm, caulibus ut videtur in basi prostratis. in nodis radicantibus, superne ad angulos decurrenti-villosis; foliorum laminis ovatis tenuibus 8—15 cm longis, 3—7.5 cm latis in apice acuminatis, in basi rotundatis. petiolis gracilibus 2,5—6 cm longis elatis, paginis ambabus viridibus utrimque sparse villosulis fere glabris; floribus tribus in verticillastris bracteis ovato-lanceolatis acuminatis viridibus tenuibus ciliatis deciduis 8—12 mm longis subtentis, glomerulis inter se 0,5—1 cm distantibus in spicis interruptis 5—8 cm longis villosis dispositis, pedicellis 2—3 mm longis elatis; calycibus florentibus 10 mm longis tenuibus ad venas pilis extensis strictis acutissimis in basi pustulato-incrassatis sparse vestitis, in maturitate 12 mm longis perlucidis, labia superiore rotundata mucronata, inferioris

laciniis acuminatis 4,5 mm longis; corollarum pallide flavarum tubo ventricoso 10 mm longo ad basim subtus valde invaginato. labia superiore 4 mm alta, inferiore 4 mm longa.

Brasilia: Minas Geraes: ? ad Caldas.

49. Sect. **Dusenostachys.**

Subsect. *Dusenostachys* Epl. in Rep. Spec. Nov., Beiheft 85, 88, 1935; species typica est *S. oligantha*.

Herbae perennes saepius glabratae foliis amplis ovatis vel rotundato-cordatis petiolis subaequilongis elatis; floribus plerumque 3—6 et ultra in verticillastris bracteis caducis subtentis in spicis interruptis approximatis; calycibus saepius tenuibus labiis subaequilongis, superiore 5—9-venia, at venis tribus frequenter prominulis; corollarum atro-cyanearum (flavidarum *S. madrensis*) tubo amplo praescrtim ad fauces profunde ventricoso, intus nudo, 10 ad 27 mm longo. labiis subaequilongis inferiore lata patente; staminibus in galea inclusis, gubernaculo in dentem parvum producto vel integro; stylo utrimque hirtello, ramo postico longiore. Plantae modo mexicanae modo brasilianae.

Closely allied in some respects to *Briquetia*.

Plantae brasilianae
- Folia 5—8 cm longa; rami pilis extensis strictis sat dense vestiti . . . . 265. *S. oligantha*
- Folia 3—6 cm longa; rami retrorse pubescentes . . . . 264. *S. lepida*

Plantae mexicanae
- Calyces florentes 5—6 mm longi; corollarum tubi 10—12 mm longi
  - Ramuli inter flores villosi; corollarum labia superior 6—7 mm alta . . . . 257. *S. biserrata*
  - Ramuli inter flores breviter glandulosi; corollarum labia superior 10 mm alta . 258. *S. flaccidifolia*
- Calyces florentes 8—16 mm longi; corollarum tubi 18—27 mm longi (11 mm *S. moncloensis*)
  - Corollarum tubi 20—27 mm longi; calycum labia superior imprimis 5-venia (etiam sub-5-venia) rotundato-mucronata
    - Folia rotundato-cordata; calyces florentes 12—16 mm longi . . . . 259. *S. atrocaulis*
    - Folia ovata in basi leniter cordata; calyces florentes 9—11 mm longi . . 260. *S. recurva*

Corollarum tubi 18—22 mm longi; calycum labia superior imprimis 7-venia acuminata
Folia subtus glabrata ad venas hirtella; calyces extus molliter villosi . . . 261. *S. concolor*
Folia subtus pubescentia; calyces extus glanduloso-hispidi . . . . 262. *S. madrensis*
Corollarum tubi 11 mm longi; calycum labia superior 3—5-venis . . . . . . 263. *S. monclovensis*

257. **S. biserrata** M. et G. in Bull. Acad. Brux. 11, II, 66, 1844 per specimen in Mexico prov. Vera Cruz in monte Orizaba a Galeotti (no. 684) lectum constituta est; typum in herb. Brux., isotypos in herb. Kew. et Delessert. vidi.

Herba perennis ut videtur ramulis superne praesertim inter flores villosis; foliorum laminis rotundato-cordatis, 7—15 cm longis, acuminatis, in basi interdum rotundatis, petiolis 5—10 cm longis elatis, marginibus serratis, paginis ambabus sparse villosis: floribus 6 in verticillastris bracteis caducis subtentis, glomerulis demum inter se 1—5 cm distantibus in spicis interruptis 20—30 cm longis dispositis; calycibus florentibus 5,5 mm longis, extus villosis labia superiore longiore, in maturitate 13—15 mm labiis subaequilongis superiore ascendente; corollarum cyanearum tubo 11—12 mm longo ventricoso, labia superiore 6—7 mm alta, inferiore subaequilonga paulo longiore.

Mexico: Vera Cruz: Orizaba: Asseradero de Santa Cruz.

258. **S. flaccidifolia** Fern. in Proc. Am. Acad. 43, 66, 1907 per specimen in Mexico prov. Hidalgo in angustiis infra Trinidad Iron Works a Pringle (no. 10298) lectum constituta est; typum in herb. Gray., isotypos plures vidi.

Herba bella altitudine 40—60 cm erecta caulibus superne glanduloso-puberulis: foliorum laminis 5—8 cm longis ovatis, in apice acuminatis in basi rotundatis, petiolis gracilibus 3—6 cm longis elatis, marginibus serratis, paginis ambabus sparse hirtellis fere glabris; floribus 1—3 in verticillastris in racemis laxis 5—10 cm longis dispositis: calycibus florentibus 6 mm longis, extus breviter glandulosis; corollarum cyanearum tubo 12 mm longo valde ventricoso, labia superiore 10 mm alta, inferiore subaequilonga paulo longiore.

Very similar to *S. biserrata*; the evidence is inconclusive.

Hidalgo: Trinidad Iron Works, 1800 m; Puebla: Haney, 2300 m.

259. **S. atrocaulis** Fern. in Proc. Am. Acad. 43, 66, 1907 per specimen in Mexico prov. Hidalgo in angustiis prope Trinidad Iron Works a Pringle (no. 8887) lectum constituta est; typum in herb. Gray., isotypos complures vidi.

Herba elata altitudine ad 2.5 m caulibus superne glaberrimis: foliorum laminis rotundato-cordatis 10—18 cm longis, petiolis glabris 6—18 cm longis elatis; in apice acuminatis, marginibus serrulatis, paginis ambabus fere glabris: floribus plerumque tribus in verticillastris bracteis rotundatis glabris caducis subtentis, glomerulis demum inter se 1—3 cm distantibus in spicis interruptis 15—30 cm longis dispositis; calycibus florentibus 12—16 mm longis extus ad basim sparse villosulis, in maturitate paulo auctis. pedicellis 10—12 mm longis elatis; corollarum cyanearum tubo 27 mm longo, supra medium ventricoso, labia superiore 20 mm alta, inferiore paulo breviore.

Very similar to *S. recurva*. The evidence is inconclusive.

Hidalgo: Trinidad Iron Works, 1800 m.

260. **S. recurva** Benth. in DC., Prodr. **12**, 336, 1848 per specimen in Mexico in Sierra de San Pedro Nolasco a Jürgensen (no. 676) lectum constituta est; typum in herb. Kew., isotypum in herb. Delessert. vidi.

Herba perennis altitudine ad 2 m caulibus pluribus erectis ramis glabris superne sparse glandulosis interdum villosis; foliorum laminis tenuibus membranaceis 7—15 cm longis. ovatis, acuminatis, in basi leniter cordatis, petiolis 5—10 cm longis elatis. marginibus serrulatis, paginis ambabus glaberrimis. inferiore pallidiore; floribus 6—12 in verticillastris bracteis rotundatis concavis caducis subtentis, glomerulis demum inter se 1—4 cm distantibus in spicis interruptis 15—20 cm longis dispositis; calycibus florentibus extus sparse villosis 9—11 mm longis, in maturitate 15 mm longis, labia superiore erecto-recurvata 3—5-venia: corollarum cyanearum tubo 20—25 mm longo, labia superiore 13—20 mm alta, inferiore subaequilonga.

Mexico: Oaxaca: Sierra San Pedro Nolasco: Chiapas; Guatemala: Huehuetenango: in angustiis humidis Sierra Cuchumatanes. facie septentrionale. 3200 m.

261. **S. concolor** Lamb. ex Benth., Lab. Gen. et Sp. 297 (Julii mensis) 1833 per specimen in Mexico a Campbell lectum constituta est; typum olim in herb. Lambert., hodie in herb. Delessert. vidi. — *S. cyanea* Benth., Lab. Gen. et Sp. 296 (Julii mensis) 1833 et in DC., Prodr. 12, 336, 1848 per specimen in Mexico a Mociño et Sessé lectum constituta est; typum olim in herb. Lambert., hodie in herb. horti bot. Oxon. et isotypum in herb. horti bot. Matrit. vidi (non Fischer, Cat. Hort. Gorenk. 21, 1808). — *S. cyaniflora* Dietr. in Otto et Dietr., Allg. Gartenz. 1. 301 (Novembris mensis) 1833 per specimen e seminibus mexicanis eductum constituta est; non typum sed specimen verum in herb. Univ. Goett. vidi.

Frutex rotundus altitudine ad 2 m ramis superne praesertim inter flores villosis; foliorum laminis deltoideo-ovatis interdum cordatis 10—20 cm longis tenuibus, in apice vel acutis vel acuminatis, in basi vel truncatis vel rotundato-cordatis, petiolis 3—8 cm longis elatis, marginibus serratis, paginis ambabus praesertim subtus ad venas hirtellis, floribus 6—12 in verticillastris bracteis ovato-caudatis caducis subtentis in spicis speciosis caeruleis 20—50 cm longis dispositis, glomerulis demum inter se 1,5—2 cm distantibus; calycibus florentibus 12—15 mm longis tenuibus extus molliter cyaneo-villosis, labia superiore frequenter breviter trimucronata, in maturitate paulo auctis; corollarum cyanearum tubo 20—22 mm longo, superne valde ventricoso infra medium tubuloso, labia superiore 5—6 mm alta, inferiore paulo longiore.

Mexico: Temascaltepec, Meson Viejo, 2830 m; Cañada prope Contreras, 2300 m; Sierra de las Cruces, 3200 m; in umbrosis El Desierto; San Lazaro ad Toluca: Puebla: Ixtaccihuatl, 3000 m.

262. **S. madrensis** Seem. in Bot. Voy. Herald 327, t. 70, 1856 per specimen in Mexico in Sierra Madre a Seemann (no. 2079) lectum constituta est: typum in herb. Mus. Brit., isotypum in herb. Kew. et Univ. Calif. (Los Angeles) vidi.

Frutex ramulis ad angulos hirtellis et superne praesertim inter flores glanduloso-hispidis viscidis; foliorum laminis 8 ad 20 cm longis, late ovatis, acuminatis, in basi rotundatis, subcordatis, petiolis 3—9 cm longis elatis, marginibus crenato-serratis, pagina superiore subglabra, inferiore pubescente; floribus 6—12 in verticillastris bracteis ovato-acuminatis caducis subtentis, glomerulis demum inter se 1—2 cm distantibus in spicis speciosis paniculatis 15—50 cm longis dispositis; calycibus florentibus 12—14 mm longis, extus glandulosis, labia superiore 7-venia; corollarum flavidarum (fide Seemann) tubo 18—19 mm longo, labia superiore 5 mm alta, inferiore paulo longiore.

Mexico: Sierra Madre.

263. **S. monclovensis** Fern. in Proc. Am. Acad. 35, 514, 1900 per specim. in Mexico prov. Coahuila in montibus Caracal dictis ad Monclova a Palmer (no. 1096) lectum constituta est; typum in herb. Gray., isotypos in herb. Smithson. et Acad. Sci. Philad. vidi.

Herba perennis elata ut videtur ramulis superne pilis brevibus acutis extensis sparse hispidulis: foliorum laminis tenuibus deltoideo-ovatis 6—10 cm longis, in apice acutis, in basi rotundato-subtruncatis, marginibus serratis, pagina superiore fere glabra inferiore sparse pubescente pallidiore, petiolis gracilibus 3—5 cm longis elatis; floribus 3—6 in verticillastris bracteis deciduis

subtentis in spicis interruptis longe pedunculatis in toto 15—25 cm longis dispositis, glomerulis infimis 2—4 cm distantibus; calycibus florentibus 8—9 mm longis extus appresso-hirtellis; corollarum caerulearum tubo 11 mm longo, labia superiore 5 mm alta, inferiore amplo longiore.

264. **S. lepida** Epl. in Rep. Spec. Nov., Beiheft 85, 88, 1935 per specim. in Brasiliae prov. São Paulo in campos de Bocaina a Löfgren lectum constituta est; typum in herb. Univ. Calif. (Los Angeles) a cl. Hoehne missum vidi.

Herba lepida altitudine 40—50 cm superne ramosa, caulibus praesertim ad angulos retrorse pubescentibus; foliorum laminis 3—6 cm longis, 18—28 mm latis, ovatis interdum ovato-lanceolatis, in apice leniter acuminatis, in basi pulchre rotundatis, petiolis 2—5 mm longis elatis, margine crenato-serrata, pagina superiore sparse scabro-hispidula, inferiore sparse hirtella, ambabus viridibus; floribus 1—3 in verticillastris bracteis non visis subtentis, glomerulis demum inter se 1—2 cm distantibus in spicis interruptis laxis glandulosis brevibus dispositis, pedicellis 3 mm longis elatis; calycibus florentibus extus praesertim ad venas pilis glandulosis extensis sparse vestitis 11,5 mm longis, labiis subaequalibus 2—2,5 mm longis, in maturitate paulo auctis; corollarum tubo ventricoso 20 mm longo intus nudo, labia superiore 8,5 mm alta, inferiore 9 mm diametro.

Brasilia: São Paulo: in campos da Bocaina.

265. **S. oligantha** Dusén in Arkiv f. Bot. 9, 16, no. 5, 1909 per specim. in Brasiliae prov. Rio Janeiro in Serra do Itatiaia a Dusén (no. 234) lectum constituta est; typum in herb. Mus. Stockh., isotypum in herb. Kew. vidi.

Suffrutex ut videtur ramis pilis extensis strictis in siccis rufis vestitis: foliorum laminis 5—8 cm longis, 2,5—4 cm latis, supra medium gradatim acuminatis in apice acutissimis, in basi rotundatis etiam subcordatis, petiolis 0,5—2 cm longis elatis, margine crenato-serrato, paginis ambabus viridibus ad venas pilis strictis extensis acutissimis sparse vestitis; floribus tribus in verticillastris bracteis rotundatis membranaceis 6—8 mm diametro caducis subtentis, glomerulis demum inter se 1—3 cm distantibus in spicis interruptis pilis extensis glandulosis vestitis 15—25 cm longis dispositis, pedicellis 5—8 cm longis elatis; calycibus florentibus 13—14 mm longis extus pilis extensis glandulosis vestitis, in maturitate 15—17 mm longis, labia superiore obtusa, inferiore laciniis acuminatis; corollarum caerulearum tubo 18 mm longo, infra medium angustato, supra medium ventricoso intus nudo, labia superiore 6—7 mm alta, inferiore 9—10 mm longa.

Brasilia: Rio Janeiro: in Serra do Itatiaia ad marginem silvae primaevae, 1800 m, la Maciera.

50. Sect. **Donnellsmithia.**

Frutices foliorum ut videtur coriaceorum laminis ovatis vel ovato-lanceolatis sat amplis breviter petiolatis; floribus 6—12 in verticillastris bracteis perstatis vel tarde deciduis conspicuis subtentis, in spicis cylindratis dispositis; calycum labia superiore 5—7-venia obtusa quam inferior paulo longiore; corollarum albarum (? vel dilute rosearum) tubo infra medium invaginato intus tamen nudo, labia superiore albo-hirsuta quam inferior breviore; staminibus in galea inclusis, gubernaculo ad medium dente parvo ornato; stylo superne villoso. Species typica est *S. Shannoni.* — Plantae Chiapenses.

Folia subtus albo-tomentosa vel cinerea utrimque pubescentia . . . . 267. *S. Shannoni*
Folia subtus glauca etiam alba ad venas sparse hirtella caeterum glaberrima (vide etiam 268. *S. Kellermanii*)
Corollarum tubi 7—7,5 mm longi . . . 266. *S. Collinsii*
Corollarum tubi 13—14 mm longi . . . 266a. *S. infuscata*

266. **S. Collinsii** J. D. Smith in Bot. Gaz. **61**, 386. 1916 per specim. in Mexico prov. Chiapas prope Pautepec a Collins et Doyle (no. 213) lectum constituta est; typum in herb. Smithson. vidi.

Frutex altitudine ad 2,5 m ramulis superne glanduloso-puberulis fere glabris rarius sparse hispidulis; foliorum laminis coriaceis ovato-lanceolatis 5—10 cm longis, in apice acuminatis acutissimis, in basi ad petiolos 1—2 cm longis angustatis, marginibus acute serratis, pagina superiore glabra. inferiore pallidiore etiam incana reticulato-venulosa et ad venas saepius molliter hirtella; floribus 6 et ultra in verticillastris bracteis conspicuis perstatis vel tarde deciduis subtentis in spicas cylindratas 5—8 cm longas confertis, glomerulis infimis interdum 1—2 cm distantibus; calycibus florentibus extus sparse appresso-hirtellis 8—9 mm longis; corollarum albarum tubo 7—7,5 mm longo, labia superiore 5 mm alta.

Mexico: Chiapas: Pautepec: Fenix.

266a. **S. infuscata** Epling sp. nov. per specim. in Mexico prov. Chiapas in regione Mapastepec ad Sta. Rita a Matuda (no. 2009) lectum constituta est; typum in herb. Univ. Calif. (Los Angeles) vidi.

Frutex ramulis superne pilis minutis extensis irrasis; foliorum laminis coriaceis ovato-lanceolatis 5—7 cm longis in apice acumi-

natis acutissimis in basi ad petiolos 1—2 cm longos rotundato-angustatis, marginibus acute serratis, pagina superiore glabra, inferiore pallidiore etiam incana praesertim ad venam mediam molliter hirsuta; floribus 6 et ultra in verticillastris bracteis conspicuis perstatis calyces subaequantibus, in spicas laxas 5—6 cm longas approximatis; calycibus florentibus extus minute appresso-hirtellis incanis vel purpureis 14—15 mm longis; corollarum ut videtur albarum infuscatarum tubo 13—14 mm longo, labia superiore 7—8 mm alta.

Very like the preceding save in flower size.

Mexico: Chiapas: Mapastepec: Santa Rita.

267. **S. Shannoni** J. D. Smith in Bot. Gaz. **19**. 256, 1893 per specim. in Guatemala, prov. Jutiapa in declivibus montis ignivomi Chingo a Shannon (no. 3612) lectum constituta est; isotypos in herb. Gray. et Kew. vidi.

Frutex ramulis pilis saepius extensis hispidulis cinereis, rarius tenuioribus subappressis, rarissime formae oaxacanae longioribus glandulosis sparse villosis; foliorum laminis plerumque ovato-lanceolatis vel ovatis, maximam partem 8—12 cm longis, 3—6 cm latis, rarius 4—8 cm longis, interdum 15 cm longis 8 cm latis, in apice saepius acutis in basi formarum angustiarum cuneato-angustatis, latiorum rotundatis, rarius etiam subcordatis, petiolis plerumque 1—1,5 cm longis, rarius 2 cm longis elatis, marginibus serrulatis, pagina superiore modo sparse hirtella modo subhirsuta, inferiore saepius albo-tomentosa; floribus 6—12 in verticillastris bracteis conspicuis saepius perstatis et coloratis, rarius tarde deciduis subtentis in spicas cylindratas plerumque 6—8 cm longas confertis; calycibus florentibus extus saepius hispidulis rarius glanduloso-subvillosis 9—10 mm longis; corollarum albarum tubo 7,5—9 mm longo, labia superiore dense villosa 5—6 mm alta.

Mexico: Chiapas: Monserrate; Jalisco; Tres Hermanos; Providencia ad Tonala; Las Pilas (Cerro Espiño); Sierra Tonala; Guatemala: Jutiapa: Volcan Chingo; Santa Rosa: Chupadero; El Salvador: Chalatenango: La Reina.

268. **S. Kellermanii** J. D. Smith in Bot. Gaz. **56**, 60, 1913 per specim. in Guatemala prov. Quezaltenango prope Santa Maria a Kellerman (no. 5628) lectum constituta est: typum mancum defloratum in herb. Smithson. vidi.

Frutex ramulis glabris; foliorum laminis 5—8 cm longis ut videtur coriaceis elliptico-oblongis, petiolis 3—4 mm longis elatis, paginis ambabus glabris nisi venis subtus ad basim sparse hirtellis, inferiore ut videtur pallidiore venulis prominulis; floribus 3—6 in verticillastris bracteis caducis subtentis in spicis confertis 3—5 cm

longis axillaribus dispositis; calycibus florentibus 8 mm longis extus glabris, labia superiore 3-venis acuminata; corollarum caerulearum tubo ut videtur circiter 8—10 mm longo.

By reason of the fragmentary nature of the type I am unable to assign this species definitely to any subsection. The style is hairy, the posterior branch longer. The stamens are toothed near the middle, the rudder being 5—6 mm long. Apparently they are included in the galea. The lower lip of the corolla is apparently longer than the upper. The upper lip of the calyx is 3-veined, however.

Guatemala: Quezaltenango: Santa Maria.

51. Sect. **Pennellia.**

Herbae perennes foliis oblongo-ovatis petiolatis floribus 3—6 in verticillastris bracteis tarde deciduis subtentis in spicis interruptis dispositis; calycum labia superiore 3-venia; corollarum cyanearum tubo intus nudo integro, labia inferiore duplo longiore patente; staminibus in faucibus positis gubernaculo ad connexum in dentem retrorsum dilato; stylo utrimque piloso, ramo postico longiore. Species una Mexicanorum: *S. Pennellii*.

269. **S. Pennellii** Epling sp. nov. per specim. in Mexico prov. San Luis Potosi in Sierra de Catorce apud Santa Ana prope Potrero a Pennell (no. 17538) lectum constituta est; typum in herb. Smithson. vidi.

Herba perennis altitudine ca. 60 cm, caulibus praesertim ad sulcos recurvo-pubescentibus superne inter flores pilis extensis brevibus vestitis; foliorum laminis oblongo-ovatis, 5—6 cm longis, in apice acutis, in basi truncatis, petiolis 5—10 mm longis elatis, marginibus crenato-serratis, paginis ambabus sparse hirtellis; floribus 3—6 in verticillastris bracteis ovato-caudatis tarde deciduis subtentis in spicis interruptis dispositis; calycibus florentibus 9—10 mm longis extus appresso-hirtellis; corollarum tubo 14 mm longo, labia superiore 5 mm alta, inferiore duplo longiore.

Mexico: San Luis Potosi: Sierra de Catorce prope Potrero.

52. Sect. **Atratae.**

Frutices pulchri insignes foliis plerumque deltoideis bullato-rugosissimis; floribus 1—3 in verticillastris bracteis caducis subtentis in spicis interruptis laxis brevibus speciosis dispositis; calycibus rubro-purpureis hispido-viscidis, labia superiore 7—9-venia obtusa paulo longioribus, in maturitate pedicellis 6—8 mm longis elatis; corollarum tubo albido circiter 3 mm longo sat ventricoso intus infra medium rugis binis vel quatuor ornato, labiis subaequilongis atro-cyaneis; staminibus in galea inclusis, guberna-

culo subintegro; stylo glabro vel sparse piloso, ramo postico longiore. Species una Mexicanorum: *S. semiatrata*.

270. **S. semiatrata** Zucc. in Abhandl. Akad. Muench. 1, 298. 1832 per specim. hortatum e seminibus in Mexico a Karwinski lectis eductum constituta est; specim. Karwinskii et icon in herb. Monac. etiam specim. verum e horto Monac. in herb. Kew. vidi.

Frutex altitudine ad 2 m ramis pilis extensis dense pilosis; foliorum laminis oblongo-deltoideis vel deltoideis, plerumque 2 ad 3 cm longis, in apice obtusis vel rotundatis, in basi truncato-subcordatis, petiolis 2—6 mm longis elatis, marginibus crenulatis, pagina superiore bullato-rugosissima viridi fere glabra, inferiore incano-tomentella; floribus 1—3 in verticillastris bracteis caducis subtentis, glomerulis demum inter se 1—2 cm distantibus in spicis interruptis laxis brevibus speciosis 10—12 cm longis dispositis; calycibus florentibus extus rubris pilis extensis viscidis dense vestitis 8—12 mm longis; corollarum tubo albo 13 mm longo, labia superiore 6 mm alta ad apicem cyanea, inferiore paulo longiore atro-cyanea.

Mexico: Oaxaca: Las Sedas, 2000 m; Teposcolula; Nochistlan; El Parian, inter Miahuatlan et San Andres.

53. Sect. Fendlera.

Subsect. *Fendlera* Epl. in Rep. Spec. Nov., Beiheft **85**, 100, 1936; species typica est *S. axilliflora*.

Suffrutices ramis pilis ramosis floccosis vestitis, foliis utrimque acuminatis: floribus in foliorum axillis congestis; calycibus extus pilis ramosis tomentosis, labia superiore 3-venia; corollarum rosearum tubo ventricoso intus nudo, labia inferiore quam superior longiore; staminibus in labia superiore galeata inclusis, gubernaculo in dentem retrorsum acutum dilato; stylo piloso. Species una venezuelanae: *S. axilliflora*.

271. **S. axilliflora** Epl. in Rep. Spec. Nov., Beiheft **85**, 100, 1936 per specim. in Venezuela circa Sanchorquiz ad Caracas a Eggers (no. 13414) lectum constituta est, typum in herb. Mus. Smithson., vidi.

Suffrutex altitudine ad 3 m, ramulis superne pilis ramosis tomentosis, mox glabris; foliorum laminis 6—12 cm longis, 3—6 cm latis, ovato-ellipticis, acuminatis, in basi in petiolum 0,5—1,5 cm longum tomentosum extenuatis, margine serrulato, pagina superiore sparse hirsuta, inferiore molliter villosula praecipue juvenilium subtomentosa; floribus circiter 6 in verticillastris glomerulis infimis frequenter omnibus in foliorum axillis supremis dispositis; calycibus florentibus extus pilis ramosis tomentosis, 7 mm longis, in maturitate 9—10 mm longis, labiis 3 mm longis, ambabus

acuminato-subcaudatis, pedicellis gracilibus pubescentibus 4 ad 5 mm longis elatis; corollarum rosearum tubo 9—10 mm longo ventricoso intus nudo, labia superiore 5 mm alta, inferiore 7 mm diametro.

Venezuela: Sanchorquiz prope Caracas, 1400 m; La Guaira.

54. Sect. Polystachyae.

Herbae perennes suffruticosae (rarius frutices?) foliis modo ovatis modo lanceolatis vel ellipticis maximam partem in basi rotundatis nullomodo cuneatis vel extenuatis nunc pubescentibus nunc glabris; floribus modo 6—12 et ultra in verticillastris in spicis interruptis vel compactis modo 1—3 in verticillastris in spicis laxis dispositis, bracteis caducis subtentis; calycibus pubescentibus vel glabris labiis saepius brevibus itaque ore interdum subtruncato superiore 3-venia; corollarum tubo cylindrato intus papillis duobus vel quatuor frequenter parvis inconspicuis (? etiam nullis) ornato, labiis saepius subaequilongis; staminibus sub labia superiore galeata ascendentibus inclusis, connectivo ad medium in dentem retrorsum producto; stylo hirtello. Species typica est *S. polystachya.* — Plantae imprimis mexicanae, interdum centrali-americanae.

Flores saepius 6—9 et ultra in verticillastris dispositi; calyces vel villosi vel hispiduli frequenter tamen solum ad venas hirtelli (vide tamen *S. igualensis*)
- Folia lanceolata vel ovato-lanceolata, petiolis 0,5—2 cm longis elata
  - Calycis maturi dentes supra nuculas obtorto-conniventes habitu *Hyptidis verticillatae* (*Sacculus*)
    - Calycis dentes 0,5—1 mm longi
      - Folia subtus appresso-hirtella . . . . 273. *S. sacculus*
      - Folia subtus pubescentia . . . . . . 275. *S. obtorta*
      - Folia subtus glabra . . . . 273a. *S. durantiflora*
    - Calyces dentes fere 2 mm longi . . . 274. *S. connivens*
  - Calycis dentes recti nullomodo conniventes; plantae austro-mexicanae glabrae (*Australes*) . . . . 272. *S. tonalensis*
- Folia ovata vel rarius elliptica petiolis 1 ad 5 cm longis elata; calycis maturi dentes nullomodo conniventes (*Polystachya*)

Flores 3—6 in verticillastris in spicis laxis angustis saepius elongatis laxe panicu-

latis dispositi; calyces florentes 3,5 mm longi . . . . 277. *S. igualensis*

Flores 6—9 et ultra in verticillastris in spicis saepius confertis 3—15 cm longis dispositi

Folia ovata in basi rotundata; corollarum tubi 4,5—8 mm longi (vide etiam *S. decoram*)

Verticillastra inter se saepius 4—15 mm in spicis congestis saepius 8—15 cm longis disposita; calyces florentes 3,5—4,5 mm longi . . . . 278. *S. polystachya*

Verticillastra inter se saepius 2—5 mm, in spicis compactis saepius 5—8 cm longis disposita; calyces florentes 2,5—4 mm longi . . . . 279. *S. compacta*

Folia ovato-elliptica in basi plus minusve angustata interdum rotundata; corollarum tubi 3,5—4,5 mm longi; plantae villosae . . . . 276. *S. lenta*

Flores plerumque 3—6 in verticillastris (vide tamen *S. igualensis*) dispositi; calyces ad venas sparse hirtelli caeterum glabri pedicellis 2—3 mm longis elati in spicis gracilibus laxis laxe paniculatis dispositi (*Glabratae*)

Calyces florentes 6,5—7 mm longi; corollarum tubi 8—8,5 mm longi . . . . . 280 a. *S. perblanda*

Calyces florentes 3—5,5 mm longi; corollarum tubi 1,5—7,5 mm longi

Folia in apice abrupte caudato-acuminata sat grande serrata habitu *Betulae albae* 280. *S. brachyodonta*

Folia in apice acuminata marginibus acute serrulatis; flores frequenter solitarii

Calyces florentes sparse et minute hirtelli 2—3,5 mm longi

Calyces florentes 3—3,5 mm longi; corollarum tubi 6—7 mm longi . 281. *S. filipes*

Calyces florentes 2—2,5 mm longi; corollarum tubi 5—6 mm longi . 281 a. *S. decora*

Calyces florentes breviter glandulosi et pilis longioribus sparse conspersi 5 ad 5,5 mm longi . . . . 282. *S. plurispicata*

The species of this section are more than ordinarily difficult of satisfactory segregation. *S. polystachya* comprises a series of forms quite constant in aspect and habit but varying in the degree and to some extent in the nature of pubescence and more particularly in the relative proportions of calyx lip to calyx tube. Yet there appear to be no very obvious geographic correlations with these characteristics. *S. brevicalyx*, which I have included within *S. polystachya*, is distinguishable chiefly by the epapillate corolla tube. A specimen collected by Conzatti at San Bernardino is the only one of numerous examples which agrees well with Keerl's plant. It suggests a shade form. *S. compacta* and *S. igualensis* are in reality scarcely separable from the main complex and perhaps should be treated as subspecies. In aspect both are distinctive, yet upon analysis there is litte of tangible value to either. The species of group *Sacculi* are in themselves fairly distinct from the remainder in the narrow leaf and shorter petiole as well as the remarkable habit of the calyx with twisted connivent teeth. Within the group, however, I am by no means assured that the differentiae which are advanced will serve to segregate more ample representations. The three proposed species may become confluent.

Australes.

Frutices mundi glabri; foliorum laminis glabris ellipticis vel ovato-lanceolatis; floribus 6—9 et ultra in verticillastris bracteis caducis subtentis in spicis confertis dispositis; calycibus glabris.

272. **S. tonalensis** Brandegee in Univ. Calif. Publ. Bot. 6, 61, 1914 per specim. in Mexico prov. Chiapas in Sierra de Tonala a Purpus (no. 7006) lectum constituta est: typum in herb. Univ. Calif. (Berkeley) vidi.

Frutex mundus ramulis glabratis superne minutissime puberulis; foliorum laminis 5—9 cm longis ovato-lanceolatis, in apice acuminatis, in basi frequenter rotundatis et ad petiolos 1—2,5 cm longos cuneato-acuminatis, marginibus serrulatis, paginis ambabus glabris nisi ad venas minutissime puberulis; floribus 6—9 et ultra in verticillastris confertis bracteis caducis subtentis in spicis densis 5—10 cm longis dispositis; calycibus florentibus extus glabris 5—6 mm longis; corollarum tubo 4,5—5 mm longo intus ad medium papillis quatuor ornato, labia superiore subaequilonga.

Mexico: Chiapas: Sierra de Tonala; Jalisco.

Sacculus.

Herbae perennes verisimiliter suffruticosae saepius plus minusve pubescentes; foliorum laminis lanceolatis vel ellipticis in

basi rotundato-angustatis; calycum maturorum laciniis supra nuculas obtorto-conniventibus habitu *Hyptidis verticillatae*.

273. S. **sacculus** Epling sp. nov. per specim. in Mexico prov. Tamaulipas prope La Morita apud Marmolejo a Bartlett (no. 10785) lectum constituta est; typum in herb. Mus. Field., isotypum in herb. Univ. Mich. vidi.

Herba perennis altitudine 1—1,5 m, ramulis pilis brevibus plus minusve recurvis pubescentibus; foliorum laminis lanceolatis 4—6 cm longis, longe acuminatis, in apice acutissimis, in basi rotundato-angustatis, pagina superiore fere glabra, inferiore appresso-hirtella, marginibus serrulatis, petiolis 1—1,5 cm longis elatis; floribus 3—6 in verticillastris bracteis caducis subtentis glomerulis approximatis in spicis laxis angustis 5—10 cm longis dispositis; calycibus florentibus 3.5 mm longis extus sparse minute appresso-hirtellis, labiis circiter 0.5 mm longis, inferioris laciniis deltoideis obtusiusculis; corollarum tubo 5 mm longo ad medium papillis binis ornato, labia superiore 3.5 mm alta.

Mexico: Tamaulipas: Sierra de San Carlos, Marmolejo, 550 m.

273a. S. **durantiflora** Epling sp. nov. per specim. in Mexico prov. Guerrero in regione Adama ad Temisco in Sierra Madre del Sur in Barranca del Julia in saxosis supra rivuli ripas a Mexia (no. 8944) lectum constituta est; typum in herb. Univ. Calif. (Los Angeles) vidi.

Herba verisimiliter suffruticosa glaberrima, ramulis gracilibus elegantibus ut videtur laxis; foliorum laminis 5—10 cm longis 2.5—4 cm latis ovato-lanceolatis in basi rotundatis supra medium acuminatis, verecunde glabris serrulatis subconcoloribus petiolis 7—15 mm longis elatis; floribus magnam partem 3 in verticillastris pedicellis gracillimis elatis glomerulis inter se 3—5 mm distantibus in spicis laxis 3—8 cm longis approximatis; calycibus florentibus 6 mm longis glabris labiis circiter 1 mm longis in maturitate valde obtortis et costatis; corollarum albarum tubo 8 mm longo ad medium papillis quatuor ornato, labia superiore 5 mm alta; nuculis angulatis in apice acutis.

Mexico: Guerrero: Adama: Sierra Madre del Sur in Barranca de la Julia in saxosis supra rivuli ripas, 560 m.

274. S. **connivens** Epling sp. nov. per specim. in Mexico prov. San Luis Potosi in faucibus San Jose dictis a Pringle (no. 3224) lectum constituta est; typum in herb. Univ. Calif. (Los Angeles), isotypos plures vidi. — *S. polystachya* var. *potosina* Briq. in Ann. Conserv. et Jard. Bot. Genève 2. 138, 1898 per specim. idem constituta est; typum in herb. Delessert. vidi.

Herba perennis ramulis pilis plus minusve recurvis brevibus pubescentibus; foliorum laminis ovato-lanceolatis, 3—7 cm

longis, longe acuminatis, in apice acutissimis, in basi rotundato-angustatis, petiolis 0,5—1 cm longis elatis, marginibus crenato-serrulatis, pagina superiore hirtella, inferiore tomentosa, in nonnullis pubescente; floribus 6—9 in verticillastris bracteis caducis subtentis glomerulis approximatis, infimis 1—2 cm inter se distantibus in spicis sat densis 10—20 cm longis dispositis; calycibus florentibus 4,5—5 mm longis extus praesertim ad venas subappresso-hirtellis, venis sat prominulis, labiis circiter 2 mm longis, inferiore laciniis acuminatis; corollarum tubo 5—6 mm longo intus nudo, labia superiore 4,5 mm alta.

Mexico: San Luis Potosi: Minas de San Rafael; San Jose Pass.

275. **S. obtorta** Epling sp. nov. per specim. in Mexico prov. Guanajuato prope Jaral a Schumann (no. 217) lectum constituta est: typum in herb. Smithson. vidi.

Herba perennis ramulis superne pilis extensis hispidulis; foliorum laminis anguste ovatis vel ovato-lanceolatis, 4—5 cm longis, leniter acuminatis, in basi rotundatis, petiolis 0,5—1 cm longis elatis, marginibus crenato-serratis, pagina superiore hirtella, inferiore pubescente; floribus 6—9 in verticillastris bracteis caducis subtentis glomerulis in spicis sat densis 8—10 cm longis approximatis; calycibus florentibus 4,5 mm longis extus pilis brevibus extensis sat dense hispidulis, labiis circiter 1 mm longis, venis incrassatis; corollarum tubo 6 mm alto intus ad basim papillis quatuor ornato, labia superiore 4,5 mm alta.

Mexico: Guanajuato: Jaral.

Polystachyae.

Herbae perennes vel suffrutices rudes saepius pubescentes; foliorum laminis plerumque ovatis etiam rotundato-ovatis rarius ellipticis; floribus 6—9 et ultra in verticillastris densis in spicis vel interruptis vel densissime compactis dispositis.

276. **S. lenta** Fern. in Proc. Am. Acad. 45, 419, 1910 per specim. in Mexico prov. (?) Guerrero ad Real de Guadalupe a Langlassé (no. 343) lectum constituta est: typum in herb. Gray., isotypum in herb. Smithson. vidi.

Herba perennis ut videtur ramis gracilibus pilis crassiusculis villosis; foliorum laminis ovatis vel ellipticis 4—5 cm longis, in apice acuminatis, in basi vel rotundatis vel cuneato-angustatis, petiolis circiter 1 cm longis elatis, marginibus crenato-serratis, paginis ambabus sparse villosis; floribus 6—9 in verticillastris bracteis caducis subtentis, glomerulis inter se 3—10 mm distantibus in spicis angustis villosis 15—20 cm. longis dispositis; calycibus florentibus pilis crassiusculis villosis 3 mm; co-

rollarum tubo 3.5—4,5 mm longo, intus ad basim papillis binis ornato, labia superiore 2,5—4,5 mm alta.

Mexico: (?) Guerrero; Real de Guadaloupe, 1100 m; El Ocote, Cerro Pedregoso; Oaxaca: Santa Maria Ozolotepec.

277. **S. igualensis** Fern. in Proc. Am. Acad. **36**, 500, 1901 per specim. in Mexico prov. Guerrero in montibus apud Iguala a Pringle (no. 8418) lectum constituta est; typum in herb. Gray., isotypos plures vidi. — ? *S. Ghiesbreghtii* Fern. in Proc. Am Acad. **35**, 511, 1900 per specim in Mexico prov. Chiapas a Ghiesbreght (no. 129) lectum constituta est; typum in herb. Gray. vidi.

Herba perennis ramulis pilis minutis ascendenti-appressis cinereis; foliorum laminis ovatis plerumque 6—8 cm longis, in apice abrupte acuminatis, in basi rotundato-angustatis, petiolis 1—3 cm longis elatis, marginibus sat grande serratis, pagina superiore glabra, inferiore ad venas minutissime appresso-hirtella; floribus 3—6 in verticillastris bracteis caducis subtentis glomerulis approximatis infimis inter se 1—1,5 cm distantibus in spicis subinterruptis laxis angustis laxe paniculatis 8—30 cm longis dispositis; calycibus florentibus 3,5 mm longis extus ad venas breviter appresso-hirtellis, pedicellis circiter 1 mm longis elatis, labiis vix 1 mm longis; corollarum tubo 5 mm longo, intus ad medium papillis quatuor ornato, labia superiore 3 mm alta.

Scarcely separable from forms of *S. polystachya*; *S. Ghiesbreghtii* is very similar but with more flowers in the verticils. It is in turn scarcely separable from other forms of *S. polystachya*.

Mexico: Guerrero: Iguala, 1300 m.

278. **S. polystachya** Ort., Hort. Matr. Dec. **55**, 1797 per specim. e seminibus mexicanis a Sessé lectis eductum constituta est; specim. Cav. in herb. Jussieu. vidi. — *S. caesia* Willd., Enum. Hort. Berol. **40**, 1809 per specim. in Mexico a Humboldt et Bonpland lectum constituta est; specim. non vidi. — *S. lineatifolia* Lag., Gen. et Sp. 2, 1816. — *S. polystachya* var. *philippensis* Fern. in Proc. Am. Acad. **35**, 512, 1900 per specim. in Mexico prov. Oaxaca in Sierra de San Felipe a Nelson (no. 1175) lectum constituta est; typum in herb. Smithson. vidi. — *S. polystachya* var. *seorsa* Fern., l. c., per specim. in Mexico in valle Mexico a Pringle (no. 2818) lectum constituta est; typum in herb. Gray. vidi. — *S. polystachya* var. *caesia* Briq. in Bull. Soc. Bot. Belg. **30**, 236, 1891 per *S. caesiam* Willd., l. c., constituta est. — *S. polystachya* var. *albicans* Fern., l. c., per specim. in Guatemala ad Santa Rosa a Heyde et Lux (no. 4394) lectum constituta est; typum in herb. Gray. vidi. — *S. lilacina* Fern. in Proc. Am. Acad. **45**, 418, 1910 per specim. in Mexico prov. Michoacan prope Uruapan a Pringle (no. 13279) lectum constituta est; typum in herb. Gray. vidi.

Herba perennis altitudine 1—3 m et ultra, ramulis superne saepius appresso-hirtellis interdum hirtis extensis brevibus villosis, rarius fere glabris minutissime puberulis; foliorum laminis ovatis plerumque 4—8 cm interdum 15 cm longis, in apice acuminatis in basi pulchre rotundatis rarius rotundato-angustatis, petiolis maximam partem 1—3 (5) cm longis elatis, marginibus serrulatis, pagina superiore glabrata, inferiore vel glabra vel pubescente interdum tomentosa; floribus plerumque 6—9 in verticillastris rarius 12 et ultra bracteis caducis rarius tarde deciduis subtentis glomerulis in spicis cylindratis, saepius 8—15 cm longis angustis paniculatis saepius confertis interdum infime interruptis submoniliformibus dispositis; calycibus florentibus 3—4,5 mm longis extus saepius villosis frequenter solum ad venas hirtellis, pedicellis maximam partem 1—1,5 mm longis elatis; corollarum tubo 5—8 mm plerumque 6—7 mm longo intus ad basim papillis quatuor ornato (rarius nudo), labia superiore 3,5—4,5 mm alta.

Mexico: Vera Cruz: Orizaba; — Hildalgo: San Toro, Zacualtepan; Guanajuato: Sayahuaxtli; — Mexico: Rio Hondo; Lecheria: Xochimilco; Amecameca; Tlalpuhajua; Ajusco Mts.; — Queretaro: inter Cadereyta et Visaron; — Puebla: Amozoc, 2800 m; Cerro de Paxtla, San Luis; Coxatlan: Puebla, Hacienda Guadalupe: San Baltazar; Mayorazgo, 2120 m: Sierra de Zacapoaxtla; — Morelos: Tres Marias Mts., 3100 m: Ozumba, 2600 m: Cuernavaca, 2800 m: Sierra de Tepoxtlan, 2500 m: Parque Station, 2500 m; — Michoacan: Patzcuaro: Morelia: Quinceo: Rincon, 1850 m; Zapote; — Guerrero: Montes da Oca: Capirial, 960 m; — Oaxaca: Sierra de San Felipe, 2500 m.

Guatemala: Amatitlan; Guatemala; Patal inter Tastic et Sta. Rosa; Sta. Rosa; Quezaltenango; Chichavac (Chimaltenango).

Panama: El Boquete, Chiriqui, 1000—1300 m.

The form in Guatemala is chiefly var. *albicans* Fern.

279. **S. compacta** Kuntze, Rev. Gen. 530, 1891 per specim. in Costa Rica in monte ignivomo Turrialba a Kuntze lectum constituta est; typum in herb. horti bot. Nov. Eborac., isotypum in herb. Kew. vidi. — *S. flexuosa* Presl ex Benth., Lab. Gen. et Sp. 248, 1833 per specim. in Mexico ab Haenke lectum constituta est; isotypos in herb. Mus. Prague, Kew. et Univ. Calif. (Los Angeles) vidi (non Schrank in Syll. Ratisb. 2, 57, 1828). — (?) *S. brevicalyx* Benth. in DC. Prodr. 12, 309, 1848 per specim. in Mexico Prov. Oaxaca a Keerl lectum constituta est; typum in herb. Kew., isotypum in herb. Univ. Calif. (Los Angeles) vidi. — *S. compacta* var. *latifolia* Kuntze, l. c., per specim. idem constituta est. — *S. compacta* var. *irazuensis* Kuntze, l. c., per specim. in Costa Rica in monte ignivomo Irazu a Kuntze lectum constituta est; typum

in herb. horti bot. Nov. Eborac., isotypum in herb. Kew. vidi. — *S. compacta* var. *Oerstedtiana* Kuntze, l. c., per specim. in Costa Rica ad Pacaca ab Oersted lectum constituta est; typum in herb. Kew. vidi. — *S. Durandiana* Briq. ex Durand et Pittier in Bull. Soc. Bot. Belg. 30, 236, 1891. — *S. Cataria* Briq. in Ann. Conserv. et Jard. bot. Genève 2, 142, 1898 per specim. in Costa Rica in silvis Rodeo de Pacaca a Pittier (n. 3255) lectum constituta est: typum in herb. Delessert., isotypum in herb. Mus. Brux. vidi. — *S. menthiformis* Fern. in Proc. Am. Acad. 35, 510, 1900 per specim. in Costa Rica per specimina plura constituta est: specim. Cooperianum (n. 5903) in herb. Gray. typum designo. — *S. polystachya* subsp. *Pittieri* Briq. in Bull. Soc. Bot. Belg. 30, 237, 1891 per specim. in Costa Rica prope San Jose a Pittier (no. 82) lectum constituta est; typum in herb. Mus. Brux. vidi.

Herba perennis altitudine 1—1,5 m ramulis superne glabratis pilis minutissimis appressis conspersis; foliorum laminis plerumque 3—6 cm longis ovatis vel rotundato-ovatis in apice breviter acuminatis in basi pulchre rotundatis nonnullis lenissime cordatis, petiolis 1—3 (—5) cm longis elatis, marginibus crenato-serratis, pagina superiore glabra, inferiore glabrata ad venas pilis minutissimis appressis vestitis, nonnullis ad venae mediae basim longioribus hirsutis; floribus 6—9 et ultra in verticillastris bracteis caducis subtentis 2—5 mm inter se distantibus in spicis cylindratis compactis plerumque 5—8 cm, rarius 10 cm longis, dense paniculatis dispositis; calycibus florentibus 2,5—4 mm longis extus saepius ad venas hirtellis, interdum fere glabris vix villosis, labiis plerumque circiter 0,5 mm longis; corollarum tubo 4,5—6,5 mm longo, intus ad basim papillis quatuor ornato, labia superiore 2,5—4 mm alta.

Kuntze's several varieties are of the order which one would expect on different parts of the same plant.

S. Cataria and *S. menthiformis* are wholly synonymous with each other and with *S. compacta*.

Mexico: Michoacan: Aristeo et Santa Catarina juxta Uruapan, 1600—1650 m; Puebla: Boca del Monte; Guerrero: Distr. Mina: Sierra Madre del Sur: Las Lumbreras; Distr. Adam: Temisco in Cerro de la Guacamaya, 500 m; Chilpancingo, 3000—3400 m; inter Ayuainapa et Petatlan, 1600—2200 m; Oaxaca: Tlapancingo, 2000—2300 m; — Guatemala: Volc. Fuego, Barranca Honda 1200 m; inter Jacaltenango et San Martin: Chimaltenango: Tecpan; — El Salvador: Cerro del Guayobal: Comasagua: — Costa Rica: San Jose: Rodes de Pacaca: inter Aserri et Tarbaca, 1600—1900 m, La Verbena, 1200 m; Zurqui, 2000—2500 m; Santa Maria de Dota, 1500—1800 m; El Copey, 1800—1900 m,

Alajuela, 1600—1900 m, Camino de Hatillo, 1200 m; San Sebastian, 1150 m: inter San Pedro de Montes de Oca et Curridabat, 1200 m: San Fransisco de Guadalupe, 1100 m; Cerro de Piedra Blanca; Cartago: Cartago: Las Concavas, 1140—1260 m. La Carpintera, 1500—1850 m.

Glabratae.

Herbae perennes vel frutices sat mundi maximam partem fere glabri foliis ovatis vel anguste ovatis in basi rotundatis vel subcordatis; floribus 1—3 rarius ultra in spicis pluribus brevibus plerumque laxis gracilibus dispositis; calycibus saepius glabris.

280. **S. brachyodonta** Briq. in Ann. Conserv. et Jard. bot. Genève 2, 149. 1898 per specim. in Mexico prov. Jalisco in collibus prope Guadalajara a Pringle (no. 2463) lectum constituta est; typum in herb. Delessert., isotypos complures vidi.

Herba perennis bella altitudine 30—50 cm caulibus e caudice lignoso ascendentibus glabris sparsissime minutissime hirtellis; foliorum laminis plerumque 3—7 cm longis late ovatis habitu *Betulae albae* in apice abrupte caudato-acuminatis, in basi vel rotundatis vel leniter cordatis, petiolis glabris 1—4 cm longis elatis, marginibus sat grosse serratis, paginis ambabus glabris nisi ad venas et margines sparse hirtellis; floribus 3—6 in verticillastris bracteis caducis subtentis, glomerulis approximatis 3—12 mm inter se distantibus in spicis laxis plerumque 8—10 cm longis dispositis; calycibus florentibus 3—4 mm longis extus ad venas hirtellis, caeterum glaberrimis, pedicellis 2—3 mm longis elatis, labiis vix 0,5 mm longis ore itaque subtruncato; corollarum tubo 4,5—5,5 mm longo, intus ad basim papillis quatuor ornato, labia superiore 4,5—5,5 mm alta.

Mexico: Aguascalientes: Aguascalientes; Jalisco: Guadalajara, 1600 m; Rio Blanco.

280a. **S. perblanda** Epling sp. nov. per specim. in Mexico prov. Guerrero in regione Mina ad Paracho in pineto a Hinton (no. 9946) lectum constituta est; typum in herb. Univ. Calif. (Los Angeles). isotypum in herb. Kew. vidi.

Frutex mundus glaber altitudine 4 m, ramulis pilis minutis crebris extensis puberulis; foliorum laminis ovatis plerumque 4—5 cm longis, in apice abrupte acuminatis in basi rotundatis, marginibus crenato-serratis vel subintegris, paginis ambobus glaberrimis inferiore pallidiore reticulato-venulosa punctulato-glandulosa, petiolis 0,5—1 cm longis elatis; floribus 3—6 in verticillastris bracteis caducis subtentis, glomerulis in spicas ut videtur secundas 3—5 cm longas subaxillares approximatis 2—3 mm inter se distantibus; calycibus florentibus extus glabris vel sparse appresso-hirtellis 7 mm longis, pedicellis 2—3 mm longis elatis,

labiis 2 mm longis; corollarum albidarum tubo 8 mm longe intus ad basim papillis quatuor ornato, labia superiore 4,5—5 mm alta.

Mexico: Guerrero: Mina: Paracho in pineto, 2350 m.

281. **S. filipes** Benth. in DC. Prodr. 12, 309. 1848 per specim. in Mexico ad cataracta Regla a Hartweg (no. 375) lectum constituta est; typum in herb. Kew., isotypos in herb. horti bot. Nov. Eborac. et Univ. Calif. (Los Angeles) vidi. — *S. rhomboidea* Sessé et Moc., Fl. Mex. ed. 2, 6, 1834; specimen ex herb.

Herba perennis glabra ramulis gracilibus superne minutissime sparsissime hirtellis: foliorum laminis ovatis 4—8 cm longis, in apice acuminatis. in basi pulchre rotundatis et lenissime cordatis, petiolis 1—4 cm longis elatis, marginibus serrulatis, paginis ambobus glabris nisi subtus minutissime hirtellis: floribus 1—3 in verticillastris bracteis caducis subtentis glomerulis approximatis in spicis gracilibus laxioribus 3—8 cm longis paniculatis dispositis; calycibus florentibus fere glabris ad venas sparse et minute hirtellis 3—3,5 mm longis, pedicellis 2—3 mm longis elatis, corollarum tubo 6—7 mm longo, intus ad basim papillis quatuor ornato, labia superiore 3,5—4,5 mm alta.

Mexico: Hidalgo: Regla.

281a. **S. decora** Epling sp. nov. per specim. in Mexico prov. Guerrero in regione Mina ad rivulum inter Armenia et Lagunas a Hinton (no. 9762) lectum constituta est; typum in herb. Univ. Calif. (Los Angeles), isotypum in herb. Kew. vidi.

Suffrutex glaber altitudine 3 m, ramulis gracilibus superne minutissime sparsissime hirtellis vel glabris: foliorum laminis ovatis 4—8 cm longis, in apice acuminatis. in basi rotundatis, petiolis 1—4 cm longis elatis, marginibus serrulatis, paginis ambabus glabris; floribus nutantibus 6 et ultra in verticillastris bracteis caducis subtentis glomerulis inter se circiter 5 mm distantibus in spicis gracillimis 8—15 cm longis effuse paniculatis dispositis; calycibus florentibus fere glabris ad venas sparse et minute appresso-hirtellis 2—2,5 mm longis, pedicellis 1,5—2 mm longis elatis; corollarum albidarum tubo 5—6 mm longo, intus ad basim papillis duabus vel quatuor ornato, labia superiore 4 mm alta.

Mexico: Querrero: Mina. inter Armenia et Lagunas ad rivulum, 1900 m.

282. **S. plurispicata** Epling sp. nov. per specim. in Mexico prov. Michoacan in montis Patamban dicti facie septentrionali a Nelson (no. 6567) lectum constituta est; typum in herb. Smithson., isotypum in herb. Gray. vidi.

Herba perennis ut videtur ramis minutissime puberulis praesertim superne plus minusve glandulosis; foliorum laminis

anguste ovatis 4—8 cm longis, supra medium acuminatis in apice acutissimis, in basi pulchre rotundatis, petiolis gracilibus 1—3 cm longis elatis, marginibus acute serrulatis, paginis ambabus glabris nisi ad venas minutissime puberulis; floribus 1—3 in bractearum caducissimarum axillis dispositis in racemis gracilibus pluribus glanduloso-puberulis 5—10 cm longis dispositis; calycibus florentibus 5—5,5 mm longis extus glanduloso-puberulis et pilis longioribus eglandulosis extensis vix tamen rigidis conspersis; corollarum tubo 6—7,5 mm longo intus ad medium papillis duabus ornato, labia superiore circiter 4 mm alta:

Mexico: Michoacan: Mt. Patamban, 3200 m; Cerro Azul prope Morelia, 2200—2400 m; Rincon prope Morelia.

55. Sect. Urbania.

Suffrutices vel frutices ut videtur intricate ramosi, foliis sat parvis vel deltoideo-ovatis vel obovatis rarius elliptico-oblongis frequenter flabelliformibus, marginibus frequenter integris, pilis saepius minutis appressis rarius villosis vestitis; floribus vel 1—3 in foliorum axillis vel 1—6 in bractearum modo perstatarum modo deciduarum axillis dispositis in racemis brevibus vel spicis interruptis instructis; calycum labia superiore 3-venia, labiis subaequilongis: corollarum caerulearum tubo superne ventricoso infra medium plus minusve invaginato intus tamen nudo, labia inferiore quam superior longiore; staminum gubernaculo ad connexum in dentem parvum producto; styli ad apices saepius pubescentes rarius subglabri ramo postico longiore. Species typica est *S. calaminthifolia*. — Plantae Hispaniolae praesertim Haitenses.

To be distinguished from *Angulatae* chiefly in the habit of the foliage and the somewhat more ventricose corolla.

Ramuli et calyces patentim villosi . . . . 292. *S. brachyphylla*
Ramuli et calyces pilis minutis saepe appressis ornati vel glabri
  Folia elliptico-oblonga integra . . . . . 283. *S. tortuensis*
  Folia modo deltoideo-ovata modo obovata vel flabelliforma
    Flores in foliorum axillis dispositi
      Folia 1,5—3,5 cm longa petiolis 1—3.5 cm longis elata . . . . 285. *S. subaequalis*
      Folia 0,5—1.5 cm longa petiolis 2—6 mm longis elata
        Ramuli pilis minutis ascendenti-appressis incani; folia in basi plerumque truncata . . . . 287. *S. mornicola*

Ramuli pilis minutis vel extensis vel crispulis induti
Folia deltoidea-ovata in basi saepius truncata . . . . 286. *S. calaminthifoli*
Folia obovata vel flabelliformia in basi saepius cuneata . . . . . 284. *S. montecristina*
Flores in bractearum axillis in racemis vel spicis interruptis brevibus dispositi
Bracteae perstatae flabelliformes flores plus minusve cingentes . . . . . 288. *S. saccifera*
Bracteae deciduae vel perstatae ovatae vix flores cingentes
Folia subtus pubescentia . . . . . 291. *S. praetermita*
Folia subtus glabra
Flores in bractearum ut videtur perstatarum axillis (? semper) solitarii . . . . 290. *S. subglabra*
Flores 3—6 in bractearum deciduarum axillis dispositi . . . . . 289. *S. hotteana*

283. **S. tortuensis** Urb. in Arkiv f. Bot., **20** A, no. 15, 88, 1926 per specim. in Haiti, Ile la Tortue, Morne Barranca in declivibus apertis ab Ekman (no. 4312): typum in herb. Mus. Berol., isotypum in herb. Mus. Stockh. vidi.

Frutex altitudine circiter 1 m ramulis crassiusculis pilis minutissimis cinereis: foliorum laminis elliptico-oblongis rarius obovatis, 1—3 cm longis, in apice obtusis, in basi ad petiolos subnullos angustatis, marginibus integris, paginis ambabus glabris: floribus 1—3 in foliorum axillis dispositis; calycibus florentibus 7 mm longis glabris; corollarum tubo 7,5 mm longo, labia superiore 4 mm alta.

Haiti: Ile la Tortue, La Vallée, in cacumine Morne Barranca. 300—350 m.

284. **S. montecristina** Urb. et Ekm. in Arkiv f. Bot. **23** A, no. 11, 35, 1931 per specim. in Santo Domingo in Cordillera septentrionali, prov. Monte Cristi, in cacumine montis El Morro dicti ab Ekman (no. 13150) lectum constituta est; typum in herb. Mus. Stock. vidi.

Frutex altitudine circiter 1 m ramulis rigidis ascendentibus pilis minutis ascendenti-appressis cinereis; foliorum laminis obovatis ut videtur coriaceis maximam partem circiter 1 cm longis, ad petiolos subnullos cuneato-angustatis, marginibus subintegris, paginis ambabus pilis minutissimis cinereis venuloso-

rugosis; floribus in foliorum axillis solitariis: calycibus maturis 6—7 mm longis extus minute hirtellis.

Santo Domingo: Cordillera septentr. in cacumine El Morro. 200 m.

285. **S. subaequalis** Epling sp. nov. per specim. in Haiti, Ile La Gonave, Pte-à-Raquettes in declivibus Morne Fort-Fiel ab Ekman (no. 8657) lectum constituta est; typum in herb. Mus. Stockh., isotypos in herb. Smithson. et Univ. Calif. (Los Angeles) vidi.

Suffrutex ut videtur laxus altitudine ad 1 m ramulis gracilibus tortuosis pilis minutissimis crispis vel extensis cinereis; foliorum laminis sat tenuibus deltoideo-ovatis, 1,5—3,5 cm longis, in apice obtusis rarius rotundatis, in basi truncatis et ad petiolos subaequilongos graciles 1—3,5 cm longos abrupte et anguste cuneato-angustatis, marginibus leniter crenato-serratis frequenter subintegris, paginis ambabus fere glabris; floribus 2—3 in foliorum axillis dispositis. pedicellis 3—4 mm longis elatis; calycibus florentibus 5,5—6.5 mm longis extus minutissime hirtellis fere glabris; corollarum tubo 6—7 mm longo. labia superiore 4,5 ad 5 mm alta.

Haiti: Ile La Gonave, Pte-à-Raquettes, Morne Fort-Fiel.

286. **S. calaminthifolia** Vahl, Enum. 1, 233, 1805 per specim. in Santo Domingo lectum a Desfontaines missum constituta est; typi fragmenta in herb. Mus. Par. vidi.

Suffrutex altitudine circiter 1 m ramulis pilis minutis extensis cinereis; foliorum laminis 5—12 mm longis late deltoideo-ovatis, in apice obtusis interdum rotundatis, in basi saepius truncatis, petiolis 2—6 mm longis elatis, pagina superiore cinerea fere glabra, inferiore pallidiore pilis minutissimis plus minusve appressis cinerea; floribus 1—3 in foliorum axillis dispositis; calycibus florentibus 5—5,5 mm longis extus pilis minutissimis appressis cinereis; corollarum tubo 6 mm longo, labia superiore 4 mm alta.

Haiti: Massif du Nord: Les Gonaives, Coup-à-Pintade in senticeto arido, 200 m; Massif des Matheux, l'Arcahaie, inter Doco et Lully in aridis. 200 m.

287. **S. mornicola** Urb. et Ekm. in Arkiv f. Bot., **20 A**, no. 15, 88, 1926 per specim. in Haiti in Massif du Nord, Gros-Morne. M. Bonpère. in apertis aridis ab Ekman (no. 4940) lectum constituta est: typum in herb. Mus. Berol., isotypum in herb. Mus. Stockh. vidi.

Frutex incanus altitudine circiter 1 m ramulis minute apresso-hirtellis; foliorum laminis late ovatis frequenter subpalaeformibus. 1—1,5 cm longis, in apice obtusis etiam rotundatis,

in basi rotundatis vel truncatis, marginibus integris, pagina superiore cinerea, inferiore appresso-incana, petiolis 2—3 mm longis elatis; floribus in foliorum axillis solitariis; calycibus florentibus 5—5,5 mm longis, extus minutissime appresso-hirtellis cinereis; corollarum tubo 7 mm longo, labia superiore 4 mm alta.

Haiti: Massif du Nord, Gros Morne, Morne Bonpère, 500 m; Presqu'île du Nord-Ouest, Montagnes de Terre-Nueve, Gros Morne.

288. **S. saccifera** Urb. et Ekm. l. c. 46, 1926 per specim. in Haiti in Montagnes du Frou d'Eau, Morne à Cabrits in declivibus aridis ab Ekman (no. 1003) lectum constituta est; typum in herb. Mus. Berol., isotypum in herb. Stockh. vidi.

Suffrutex altitudine circiter 0,5 m ramulis plus minusve hirtellis interdum fere glabris; foliorum laminis 1,5—4 cm longis, deltoideo-ovatis, in apice obtusis, in basi subtruncatis et ad petiolos plerumque 1—3 cm longos abrupte et anguste cuneato-extenuatis, marginibus leniter crenato-serratis, paginis ambabus fere glabris inferiore ad basim frequenter pubescente; floribus 1—2 in bractearum flabelliformium axillis cinctis in racemis singularibus 3—8 cm longis dispositis; calycibus florentibus 5,4—6 mm longis extus praesertim ad venas sparse hirtellis; corollarum tubo 7—7,5 mm longo, labia inferiore 4—4,5 mm alta.

Haiti: Massif des Matheux, Thomazeau prope Glore, 500 m; Montagnes de Frou d'Eau ad Etang Saumatre, 500 m et in Morne à Cabrits, 200—400 m.

289. **S. hotteana** Urb. et Ekm. l. c. 45, 1926 per specim. in Haiti in Dept. du Sud, La Hotte occident. in colle calcareo prope Chapelle Mont Carmel ab Ekman (no. 2415) lectum constituta est; typum in herb. Mus. Berol., isotypum in herb. Mus. Stockh. vidi.

Suffrutex ut videtur procumbens glaber ramulis gracilibus; foliorum laminis glabris plerumque 1,5—2 cm longis, ovatis, in apice obtusis, in basi ad petiolos 5—15 mm longos late cuneatis, marginibus pro rata grandidentatis; floribus 3—6 in bractearum caducarum axillis positis, pedicellis gracilibus 5—6 mm longis elatis, in spicis interruptis 5—8 cm longis instructis, glomerulis inter se 1—2 cm distantibus; calycibus florentibus 5 mm longis extus fere glabris; corollarum tubo 9 mm longo, labia superiore 6—7 mm alta; stylo fere glabro.

Haiti: in colle calcareo prope Chapelle Mont Carmel, Morne de la Hotte (del Sud).

290. **S. subglabra** Urb. l. c. 46, 1926 per *S. brachyphyllam* var. *subglabram* Urb., l. c., constituta est. — *S. brachyphylla* var. *subglabra* Urb., Symb. Antill. 5, 531, 1908 per specimen in Haiti

prope Plaisance a Buch (no. 1109) lectum constituta est: typum in herb. Mus. Berol. vidi.

Suffrutex altitudine circiter 1 m ramulis gracilibus glabratis minute et sparse hispidulis; foliorum laminis vel obovatis vel flabelliformibus 2—3 cm diametro, in apice saepius rotundatis, in basi ad petiolos 1—2 cm longos cuneato-extenuatis, margine crenato, paginis ambabus glabris; floribus in bractearum perstatarum membranacearum 5—8 mm longarum axillis solitariis, in racemis 5—6 cm longis dispositis, glomerulis demum 1—1,5 cm inter se distantibus; calycibus florentibus 6 mm longis extus sparse hirtellis; corollarum tubo 8 mm longo, labia superiore 5 mm alta.

Haiti: Plaisance.

291. **S. praeterita** Epling sp. nov. per specimen in Santo Domingo prov. de la Vega in Cordillera Central prope Constanza in declivibus prope El Chorro ab Ekman (no. 13963) lectum constituta est; typum in herb. Mus. Stockh. vidi.

Suffrutex ut videtur procumbens ramulis minute crispulis; foliorum laminis 1—1,5 cm longis vel ovatis vel late deltoideo-ovatis, in apice vel obtusis vel subrotundatis, infra medium ad petiolos 3—5 mm longos cuneato-angustatis, marginibus crenato-serratis, pagina superiore hirtella, inferiore molliter pubescente, juvenilium etiam subtomentosa: floribus plerumque tribus in bractearum ovatarum deciduarum axillis dispositis, in spicis interruptis 3—8 cm longis instructis, glomerulis inter se 1—1,5 cm distantibus; calycibus florentibus 7,5 mm longis extus ad venas sparse hirtellis; corollarum tubo 8 mm longo: labia superiore 4.5 mm alta.

Santo Domingo: de la Vega: Constanza, El Chorro. 1150 m.

292. **S. brachyphylla** Urb., Symb. Antill. 3, 368, 1903 per specimen in Haiti prope Marmelade in montibus siccis a Buch (no. 449) lectum constituta est: typum in herb. Mus. Berolin. vidi.

Frutex altitudine ad 1.5 m ramulis pilis extensis crassioribus villosis: foliorum laminis obovatis frequenter flabelliformibus maximam partem 1,5—2,5 cm diametro, in basi ad petiolos 5 ad 15 mm longos cuneato-angustatis, paginis ambabus asperis sparse hispidulis, superiore ut videtur bullata, marginibus crenato-serratis; floribus plerumque tribus in bractearum deciduarum axillis dispositis in spicis interruptis 3—6 cm longis villosis instructis, glomerulis inter se 0,5—1 cm distantibus; calycibus florentibus 5.5—6,5 mm longis extus villosis; corollarum tubo 7,5—9.5 mm longo, labia superiore 5,6—6 mm alta.

Haiti: Massif du Nord: Marmelade, Fort Jalonsière in silvis sparsis, 800—1000 m et ad St. Michel, 600 m.

56. Sect. **Carneae.**

Subsect. *Carneae* in Rep. Spec. Nov., Beiheft 85, 89, 1935; species typica est *S. carnea*.

Herbae foliis saepe purpureis maximam partem late cordatis interdum ovatis; floribus 3—12 et ultra in verticillastris bracteis caducis subtentis, in spicis interruptis paniculatis dispositis; calycum saepe rubrorum labia superiore 3-venia rotundato-mucronata; corollis rubro-purpureis rarius pallidis, tubo sat amplo vix tamen ventricoso, intus ad basim papillis quatuor (*S. pseudogracilis* nudo) ornato, labia superiore erecta, inferiore paulo longiore patente; staminum gubernaculo ad connexum in dentem parvum saepius producto subintegro; stylo piloso; gynobasis cornu ovula subaequante paulo superante. Plantae ab Hidalgo usque ad Colombia incolunt.

Plantae austro-americanae
  Corollarum tubi 7—9 mm longi; calyces florentes 5,5—7 mm, maturi 7,5—8 mm longi . . . . 298. *S. carnea*
  Corollarum tubi 11—15 mm longi; calyces florentes 7—8,5 mm, maturi 9—11 mm longi
    Folia in basi cordata plus minusve pubescentia . . . . 300. *S. Killipiana*
    Folia in basi rotundata glaberrima . . 299. *S. debilis*
Plantae boreali-americanae
  Corollarum tubi 7—10 mm longi
    Folia ovata in basi rotundata; ramuli inter flores minute glanduloso-puberuli 294. *S. gracilis*
    Folia late ovata in basi saepius cordata; ramuli inter flores villosi . . . . . 293. *S. pseudogracilis*
  Corollarum tubi 10—16 mm longi
    Corollarum labia superior 7,5—9 mm alta
      Caules et folia pulchre cordata villosa 296. *S. iodochroa*
      Caules et folia late ovata fere glabra . 297. *S. simulans*
    Corollarum labia superior 4,5—7 mm alta
      Plantae plus minusve villosae . . . . 295. *S. membranacea*
      Plantae imprimis glabrae . . . . . . 297a. *S. ionocalyx*

The members of this group, including those in northern South America, are vaguely delimited and doubtless represent emergent forms having fairly well defined geographic distributions. As it occurs on Orizaba and Ixtaccihuatl, *S. gracilis* is well defined. *S. purpurascens* scarcely differs unless it be somewhat more robust. Skutch's plants from Guatemala are scarcely separable from those collected on Ixtaccihuatl, save in the slightly smaller flowers

and perhaps a slightly more villous pubescence in the spike. *S. simulans*, known only from a single collection, is very similar to the forms of Oaxaca save in the larger corolla which curves distinctly upwards from the calyx. *S. membranacea* and *S. Martensii* are very similar to each other, the former being more glabrous and with somewhat broader leaves. The former is very similar to Nelson 1100, while the latter is well represented by Pringle 5643. *S. irazuensis* is very like *S. Martensii* but with a tendency to have a finer, more glandular pubescence in the inflorescence. The range of flower size is somewhat greater in the plants of Costa Rica and Panama than those of Oaxaca. *S. pseudogracilis* has the flowers of *S. gracilis*, although epapillate and with foliage and pubescence resembling more those of *S. sidaefolia*. *S. iodochroa* is distinguished by the large flowers and deeply cordate leaves which are rather coarsely serrate. Forms intermediate with *S. membranacea* occur.

293. **S. pseudogracilis** Epling sp. nov. per specim. in Guatemala inter San Martin et Todos Santos a Nelson (no. 3628) lectum constituta est; typum in herb. Smithson. vidi.

Herba caulibus superne glanduloso-villosis sat crassis; foliorum laminis late ovatis, 5—10 cm diametro, in apice breviter acuminatis, in basis cordatis vel rotundatis, petiolis 2—7 cm longis villosis elatis, marginibus crenato-serratis, paginis ambabus plus minusve villosis; floribus 3—12 in verticillastris bracteis caducis subtentis, in spicis interruptis paniculatis 15 ad 25 cm longis dispositis; calycibus florentibus 7,5 mm longis, extus sat glanduloso-villosis; corollarum tubo 7,5—8 mm longo, intus epapillato, labia superiore 3,5 mm alta.

Guatemala: inter San Martin et Todos Santos; inter San Martin et Muhulia.

294. **S. gracilis** Benth., Lab. Gen. et Sp. 258, 1833 et in DC., Prodr. 12, 307, 1848 per specim. in Mexico a Mociño et Sessé lectum constituta est; typum olim in herb. Lambert., hodie in herb. Univ. Oxon. et specim. vera in herb. horti bot. Matrit. etiam in herb. Boissier. vidi. — *S. purpurascens* Mart. et Gal. in Bull. Acad. Brux. 11, II, 69, 1844 per specim. in Mexico prov. Vera Cruz in monte Orizaba a Galeotti (no. 683) lectum constituta est; typum in herb. Mus. Brux., isotypos in herb. Kew. et Delessert. vidi (non Mont. et Auch.).

Herba perennis gracilis ut videtur stolonifera altitudine 70 ad 80 cm, caulibus superne inter flores minutissime glanduloso-puberulis caeterum fere glabris; foliorum laminis ovatis 4—12 cm longis in apice saepius acuminatis, in basi rotundatis rarius subcordatis, marginibus serrulatis, paginis ambabus prae-

sertim subtus ad venas sparse villosulis, petiolis gracilibus 2—6 cm longis elatis; floribus 3—6 et ultra in verticillastris bracteis caducis subtentis in spicis interruptis gracilibus diffusis 15—40 cm longis dispositis, glomerulis maximam partem inter se 1—3 cm distantibus; calycibus florentibus 5—8 mm longis, extus ad venas sparse hirtellis; corollarum tubo 7—10 mm longo, labia superiore 4—5,5 mm alta.

Mexico: Vera Cruz: Orizaba, Vaguieria del Jacal ad rivulum, 3300 m; Puebla: Ixtaccihuatl, 2200—2600 m ad rivulum; Mexico: San Rafael, Temascaltepec; Sierrita, Cajones, Cumbre Cruz, Comunidad, 2510 m et Pantoja, 1500 m; (?) Michoacan: in Sierra Madre 1840 m (Langlassé 781); Oaxaca: El Pelado, 3000 m; Chiapas. — Guatemala: Chimaltenango: Santa Elena: ad silvae nubigenae margines, 3200 m; Buena Vista ad Tecpam; Huehuetenango: Sierra Cuchumatanes 3200 m.

295. **S. membranacea** Benth., Lab. Gen. et Sp. 259, 1833 et in DC., Prodr. 12. 310, 1848 per specim. in Mexico a Mociño et Sessé lectum constituta est; non typum olim in herb. Lamb. verisimiliter perditum, sed specim. verum in herb. Boissier. vidi. — *S. membranacea* var. *villosula* Benth., Lab. Gen. et Sp. 720. 1835 per specim. in Mexico prov. Oaxaca ab Andrieux (no. 147) lectum constituta est; typum in herb. Kew. vidi. — *S. Martensii* Gal. in Bull. Acad. Brux. 11, II, 77, 1844 per specim. in Mexico prov. Oaxaca in Sierra de San Felipe a Galeotti (no. 648) lectum constituta est; typum in herb. Mus. Brux., isotypos in herb. Kew. et Delessert. vidi. — *S. sidaefolia* Mart. et Gal., op. cit., 67, 1844 per specim. in Mexico prov. Oaxaca in Sierra de Llano Verde a Galeotti (no. 716) lectum constituta est; typum in herb. Mus. Brux., isotypos in herb. Delessert. et Vindob. vidi. — *S. irazuensis* Fern. in Proc. Am. Acad. 35, 540, 1900 per specim. in Costa Rica prov. Cartago in monte Irazu a J. D. Smith (no. 4920) lectum constituta est; typum in herb. Gray., isotypum in herb. Smithson. vidi.

Herba perennis gracilis altitudine ad 1 m et ultra, caulibus superne inter flores minutissime glanduloso-puberulis et pilis longioribus crassioribus plus minusve villosis; foliis late ovatis 4—10 cm diametro, in apice breviter acuminatis in basi rotundatis et maximam partem leniter cordatis, petiolis gracilibus 3—9 cm longis elatis, marginibus crenato-serratis, paginis ambabus pilis crassiusculis plus minusve villosis rarius fere glabris; floribus 3—12 in verticillastris bracteis caducis subtentis in spicis interruptis paniculatis 15—50 cm longis dispositis, glomerulis demum inter se 1—3 cm distantibus; calycibus florentibus; calycibus florentibus 7—9 mm longis, extus plerumque pilis minutis

glandulosis et praesertim ad venas longioribus crassioribus plus minusve villosis; corollarum tubo 10—15 mm longo, labia superiore 4,5—5,5 (—7) mm alta.

Mexico: Oaxaca: Cerro de San Felipe. 2800—3200 m: Cumbre de Ixtepec. — Costa Rica: Cartago: Rio Birris et La Esperanza. Volcan Irazu. 3000 m: San Jose: Cerro de las Vueltas, 2700 ad 3000 m. — Panama: Volcan Chiriqui in angustiis humidis, 2800 ad 3000 m.

296. **S. iodochroa** Briq. in Ann. Conserv. et Jard. bot. Genève 2, 161, 1898 per specim. in Costa Rica prope Ojo de Agua (no. 3451) et las Vueltas (no. 10618) a Pittier lecta constituta est; specimina in herb. Brux. et Delessert. vidi.

Herba perennis altitudine ad 1 m et ultra caulibus superne pilis glandulosis brevibus et longioribus sat dense villosis; foliorum laminis pulchre cordatis, 6—10 cm longis, acuminatis, petiolis villosis gracilibus 3—12 cm longis elatis, marginibus serratis, paginis ambabus pilis crassiusculis villosis; floribus 6—12 in verticillastris bracteis caducis subtentis in spicis interruptis paniculatis 15—40 cm longis dispositis; calycibus florentibus 8.5—9 mm longis, extus sat villosis; corollarum tubo 15 ad 16 mm longo. labia superiore 7,5—8 mm longa.

Costa Rica: San Jose: Cerro de las Vueltas, 2700—3000 m: Ojo de Agua. 2600 m.

297. **S. simulans** Fern. in Proc. Am. Acad. 43. 66. 1907 per specim. in Mexico prov. Hidalgo in angustiis humidis prope Trinidad Iron Works a Pringle (no. 8927) lectum constituta est; typum in herb. Gray., isotypos complures vidi.

Herba perennis altitudine 1 m et ultra caulibus superne inter flores minute glanduloso-puberulis caeterum glabris; foliorum laminis tenuibus 4—10 cm longis late ovatis, in apice breviter acuminatis, in basi rotundato-truncatis vel leniter cordatis, petiolis gracilibus glabris 3—10 cm longis elatis, marginibus crenato-serratis, pagina superiore sparsissime hirtella, inferiore glabra; floribus 3—6 in verticillastris bracteis caducis subtentis in spicis interruptis gracilibus 15—20 cm longis paniculatis dispositis; calycibus florentibus 8—8,5 mm longis extus ad venas sparsissime hirtellis fere glabris; corollarum tubo 14—15 mm longo assurgente, labia superiore 8,5—9 mm alta.

Hidalgo: in angustiis humidis ad ferrofabricam Trinidad.

297a. **S. ionocalyx** Epling sp. nov. per specim. in Mexico prov. Chiapas in regione Mariscal ad Siltepec in monte Pasital a Matuda (no. 134) lectum constituta est; typum in herb. Univ. Calif. (Los Angeles) vidi.

Herba ut videtur perennis sat procera caulibus glabris nisi inter flores pilis extensis minutis irrasis; foliorum laminis ovatis vel ovato-ellipticis 5—9 cm longis prominenter acuminatis, in basi rotundatis, marginibus serrulatis paginis ambabus glaberrimis nisi inferiore pallidiore saepe purpurea ad venae mediae basim hirsuta, petiolis 2—5 cm longis elatis; floribus 1—3 in verticillastris approximatis 5—10 mm inter se distantibus, bracteis caducis pulchre purpureis imbricatis ciliolatis 10—15 mm longis subtentis; calycibus florentibus 8,5—9 mm longis in maturitate vix auctis purpureis fere glabris, labiis acuminatis 3 mm longis; corollarum purpurearum tubo 13—16 mm longo, labia superiore 4—7 mm alta, inferiore paulo longiore.

Mexico: Chiapas: Mariscal: Mt. Pasital: Pinada ad Siltepec.

298. **S. carnea** Kunth in Humboldt et Bonpland, Voy., Nov. Gen. et Sp. Pl. 2. 300. t. 151, 1817 per specim. in Colombiae Andibus Quindiuensibus a Humboldt et Bonpland lectum constituta est; typum in herb. Mus. Berolin., isotypum in herb. Mus. Par. vidi.

Herba bella perennis caulibus laxis diffusis ut videtur decumbentibus superne breviter pubescentibus plus minusve glandulosis; foliorum laminis deltoideo-cordatis 2,5—6 cm diametro, in apice nunc obtusis nunc breviter acuminatis, in basi cordatis interdum rotundatis, margine crenata, pagina superiore nunc glabra nunc molliter villosa, inferiore praesertim ad venas pilis longioribus ornata interdum fere glabra; floribus 6—12 in verticillastris bracteis ovato-acuminatis 3—6 mm longis caducis subtentis, glomerulis inter se 0,5—2,5 cm distantibus in spicas interruptas cylindratas 5—15 cm longas approximatis; calycibus florentibus saepius purpureis 5.5—7 mm longis extus nunc fere glabris nunc praesertim ad venas sparse villosulis in maturitate 7,5—8 mm longis, labia superiore 2,5 mm longa maximam partem rotundato-acuminata rarius truncato-rotundato et mucronata, inferioris laciniis paulo longioribus acuminatis, pedicellis 2—3,5 mm longis elatis; corollarum rosearum tubo 7—9 mm longo sat ampliato sub labia inferiore subconstricto, labia superiore 3—4 mm alta, inferiore 5 mm lata.

Venezuela: In Sierra Nevada de Merida. — Colombia: Santander: Vetas, 3100—3200 m, ad rivuli ripas; Caldas: Pinares supra Solento ad rivulum ad silvae marginem, 2700—2900 m; Cundinamarca; ad Bogota prope Chapinero, 8800 ped.; Zyraquira, 2600 m; in pratis ad Rio Teusaca, prope Buena-vista, 2900—3000 m; ad Bogota prope Boqueron, 2850 m; Tolima: prope Murillo in agris. 2000—2300 m; El Cauca: Popayan, in facie orientali Paramo de Guanacas, 2500—3300 m.

299. **S. debilis** Epl. in Rep. Spec. Nov., Beiheft 85, 89, 1935 per specim. in Colombiae prov. Santander prope Las Vegas in silvis a Killip et Smith (no. 16092) lectum constituta est; typum in herb. Univ. Calif. (Los Angeles), isotypum in herb. Smithson. vidi.

Herba gracilis debilis in basi plus minusve prostratis altitudine ad 1.5 m, internodiis glabris: foliorum laminis ovatis 4,5 ad 10 cm longis, 2,5—6,5 cm latis, in apice breviter acuminatis, in basi pulchre rotundatis, rarius infimis leniter subcordatis, petiolis gracilibus 1,5—7 cm longis elatis, margine serrato, paginis ambabus glabris viridibus; floribus 3—6 in verticillastris bracteis glabris ovato-caudatis 3,5 mm longis caducissimis subtentis, glomerulis demum inter se 1—3 cm distantibus in spicis interruptis laxis gracilibus 5—30 cm longis minutissime puberulis vel glabris dispositis, pedicellis 3—6 mm longis elatis; calycibus florentibus glaberrimis membranaceis perlucidis saepe purpureis 7—8 mm longis, in maturitate paulo auctis; corollarum rosearum vel albidarum tubo 15 mm longo. labia superiore 7 mm alta, inferiore 5 mm diametro.

Colombia: Santander: prope Las Vegas in silvis, 2600 ad 3000 m.; in declivitate occidentali montis San Vicente ad Charta in silvis umbrosis humidis, 2500—2700 m.

300. **S. Killipiana** Epl. in Rep. Spec. Nov.. Beiheft 85, 90, 1935 per specim. in Colombiae prov. Santander in facie occidentali Paramo Rico a Killip et Smith (no. 15604) lectum constituta est; typum in herb. Mus. Smithson., isotypum in herb. Univ. Calif. (Los Angeles) vidi.

Herba bella perennis altitudine ad 1 m caulibus laxis diffusis ut videtur decumbentibus superne pubescentibus interdum fere glabris; foliorum laminis deltoideo-cordatis 2—6 cm diametro, in apice nunc obtusis nunc breviter acuminatis, in basi cordatis, petiolis gracilibus 1—5 cm longis elatis, margine crenato, pagina superiore nunc glabra nunc molliter villosa, inferiore praesertim ad venas pilis longioribus ornata interdum fere glabra; floribus 6—12 in verticillastris bracteis subrotundis 4—5 mm longis caducis subtentis, glomerulis inter se 0,5—2,5 cm distantibus in spicas interruptas cylindratas 5—15 cm longas approximatis; calycibus florentibus saepius purpureis 7—8,5 mm longis, extus ad venas sparse villosulis, in maturitate 9—11 mm longis; corollarum rubropurpurearum tubo 12—14 mm longo sat ampliato, sub labia inferiore subconstricta, labia superiore 5—6 mm alta, inferiore 7—8 mm lata.

Venezuela: in Sierra Nevada de Merida. — Colombia: Santander: in silvis prope Chico, 9000 ped.: in facie occidentali Paramo Rico, 3600 m; ad marginem Paramo de las Vegas, 3300 ad

3700 m; Cundinamarca: El Palmas ad Bogota; El Boqueron, Bogota, 2700 m; in Paramo de Choachi prope Bogota, 3700 m; Tolima: Mariquita: Quindio: in silvis ad viam Quindiuensem novam prope La Lora; El Cauca: in paramo de Guanacas, 2500 ad 3300 m.

57. Sect. Angulatae.

Subsect. *Angulatae* Epl. in Rep. Spec. Nov., Beiheft 85. 67, 1935; species typica est *S. tiliaefolia*.

Herbae nunc annuae nunc perennes vel frutices foliis ovatis vel ellipticis interdum deltoideo-ovatis, in apice saepius acuminatis, in basi modo cuneatis vel extenuatis modo rotundatis interdum truncato-rotundatis et abrupte et anguste ad petiolos cuneatis; floribus 3—6 et ultra in verticillastris bracteis vel caducis vel perstatis saepius parvis subtentis in spicis interruptis dispositis; calycum labia superiore 3-venia (5-venia *S. consimilis* interdum *S. arenariae*); corollarum albarum vel caerulearum (*S. intonsae* rosearum) tubo vel cylindrato vel ventricoso rarius ad basim leniter invaginato, intus nudo, labia inferiore quam superior longiore; staminibus in labia superiore galeata inclusis, gubernaculo in dentem retrorsum dilatato; stylo pubescente raro glabro. Plantae a Nuevo Leon et Sinaloa usque ad Brasil et Argentina disseminatae sunt.

A group of closely related plants of wide distribution, the study of which is handicapped by the paucity of material.

Plantae austro-americanae
- Plantae andinae; flores caerulei (*S. intonsa* excepta)
  - Corollarum tubi 13—14 mm longi
    - Folia elliptica vel elliptico-lanceolata; calycum labia superior acuminata . . . 327. *S. sphacelioides*
    - Folia ovata vel ovato-elliptica; calycum labia superior truncato-rotundata abrupte mucronata subcaudata . . . . 342. *S. ocimifolia*
  - Corollarum tubi 3,5—9 mm longi
    - Flores rosei . . . . 321. *S. intonsa*
    - Flores caerulei
      - Folia plerumque in basi acuminato-extenuata
        - Folia subtus pubescentia
          - Plantae venezuelanae . . . . . 328. *S. angulata*
          - Plantae colombianae . . . . . 330. *S. bogotensis*
        - Folia subtus glabra vel ad venas minute hirtella

Folia ovata 3—7 cm lata; corollarum tubi 4—5 mm longi . . 329. *S. longimarginata*
Folia elliptica 1,5—2,5 cm lata: corollarum tubi 6—7 mm longi 326. *S. laxispicata*
Folia plerumque in basi rotundata interdum angustata nullomodo extenuata
Corollarum tubi 3,5—4 mm longi 305. *S. tiliaefolia*
Corollarum tubi 4,5—8 mm longi
Folia subtus glabra
Corollarum tubi 5—6 mm longi 340. *S. membranicalyx*
Corollarum tubi 7—8 mm longi 341. *S. perlucida*
Folia subtus solum ad venas hirtella
Calyces maturi in apice 4 mm lati, labia inferiore 2 ad 2,5 mm longa . . . . . . 306. *S. obvallata*
Calyces maturi in apice 5 ad 7 mm lati, labia inferiore 4—5 mm longa . . . . . 307. *S. personata*
Folia subtus ubique molliter pubescentia
Folia saepius ovata; calyces florentes 6 mm longi in maturitate 8 mm longi . . . 309. *S. penduliflora*
Folia saepius elliptico-ovata; calyces florentes 7,5 ad 8,5 mm longi in maturitate 9—10 mm longi . . . . . 339. *S. amplifrons*
Plantae brasilianae; flores rosei
Corollarum tubi 21 mm longi . . . . . 324. *S. nemoralis*
Corollarum tubi 7—12 mm longi
Calycum labiae consimiles acutae; folia deltoideo-ovata . . . . 325. *S. consimilis*
Calycum labiae dissimiles, superior rotundata; folia ovata vel elliptica
Folia maximam partem elliptica in basi rotundato-angustata . . . . 322. *S. arenaria*
Folia maximam partem ovata in basi pulchre rotundata . . . . 323. *S. itatiaiensis*
Plantae boreali-americanae
Herbae annuae graciles altitudine maximam partem minus quam 1 m (nisi *S. urolepis*), foliis late ovatis in basi

saepius rotundato-truncatis (vide *S. alienam* et *S. perplicatam*)
Caules superne et calyces pilis appressis hirtelli
Calycum labia inferior in maturitate 3,5—4 mm longa
Folia subtus albo-tomentosa; plantae prov. Tamaulipas et Nuevo Leon 303. *S. urolepis*
Folia subtus sparse pubescentia plantae prov. Jalisco, Colima et Michoacan . . . . 304. *S. uruapana*
Calycum labia inferior in maturitate 1,5—2 mm longa . . . . 302. *S. leptostachys*
Caules superne et calyces vel crispule hispiduli vel villosi
Caules superne crispule pubescentes: calyces solum ad venas hispiduli . 305. *S. tiliaefolia*
Caules superne patentim villosi: calyces utrimque praesertim infra medium villosi . . . . 301. *S. rhyacophila*
Herbae perennes ut videtur plus minusve suffruticosae altitudine saepius 1—3 m (*S. flaccidae* 15—40 cm); foliis modo ovatis in basi saepius cuneatis enim vero extenuatis rarius truncatis (solum *S. myrianthae* subcordatis)
Herbae perennes altitudine 15—40 cm; corollarum albarum tubi 14—17 mm longi . . . . 343. *S. flaccida*
Herbae perennes ut videtur suffruticosae altitudine saepius 1—3 m; corollarum tubi 3,5—12 mm longi
Calyces extus pilis longioribus villosi (vide etiam *S. myriantham*) vel nisi glandulis sessilibus perlucidis conspersi omnino glabri (*S. roscidae* glandulis capitatis brevibus breviter hispiduli)
Plantae haitienses . . . . 320. *S. haitensis*
Plantae continentis
Plantae sinaloenses et insularum Tres Marias strictae ut videtur dumetorum foliis in basi patentim truncatis marginibus pro rata grandidentatis

Corollarum tubi 7—8 mm longi (vide *S. prasiifoliam*) . . . . . 317. *S. aliena*
Corollarum tubi 4 mm longi . . . 318. *S. perplicata*
Plantae foliis in basi cuneatis vel extenuatis (*S. caudatae* rotundatis et in apice caudatis)
Bracteae deciduae vel caducae
Plantae mexicanae
Bracteae rotundae membranaceae 6—8 mm longae tarde deciduae; calyces extus pilis brevibus capitatis extensis glandulosi et longioribus paucis conspersi; plantae prov. Durango . . . . . . 310. *S. roscida*
Bracteae glumaceae tarde deciduae 1—1,5 cm longae, ciliatae, calyces et caules glabri; plantae prov. Nuevo Leon . . . . 309. *S. caudata*
Bracteae late ovatae membranaceae 6—10 mm longa deciduae; calyces, bracteae et caules villosi; plantae prov. Hidalgo . . . . 312. *S. arthrocoma*
Plantae praesertim costaricenses glabrae; bracteae parvae caducae
Corollarum tubi 5—7 mm longi 338. *S. Alvajaca*
Corollarum tubi 9,5—10 mm longi . . . . 337. *S. drymocharis*
Bracteae perstatae (interdum *S. fuscae* ut videtur tarde deciduae) plerumque 2—5 mm longa
Bracteae extus (nisi *S. fallacis*) saltem ad margines villosulae
Corollarum tubi 4—4.5 mm longi; plantae prov. Guerrero
Folia subtus molliter pubescentia; bracteae lanceolatae 314. *S. fusca*
Folia subtus glabra; bracteae deltoideae . . . . 314a. *S. languidula*
Corollarum tubi 6—8 mm longi

Plantae prov. Durango spicis sat dense villosis . . . . 315. *S. muciflora*
Plantae prov. Sinaloa usque ad Jalisco
Corollarum tubi 7—8 mm longi; folia sat grandidentata . . . . 316. *S. prasiifolia*
Corollarum tubi 6—7 mm longi
Folia petiolis 1—2,5 cm longis elata . . . . . 311. *S. fallax*
Folia petiolis plerumque 3—6 cm longis elata . 313. *S. remissa*
Bracteae utrimque glabrae parvae 1—2 mm latae; calyces semper glabri nisi sparsissime appresso-hirtelli
Foliorum laminae in basi extenuatae ad petiolos decurrentes; plantae civ. Panama . . . . 329. *S. longimarginata*
Foliorum laminae in basi cuneatae vix tamen extenuatae
Plantae sinaloenses bracteis ovato-acuminatis foliis tenuibus . . . . 332. *S. mazatlanensis*
Plantae centrali-mexicanae etiam centrali-americanae usque ad Panama incolunt . . . 331. *S. albiflora*
Calyces extus pilis brevibus hirtelli. vix tamen villosi, rarius fere glabri (vide etiam *S. Alvayaca* et *S. drymocharis*)
Folia in basi cuneata vel extenuata
Bracteae lanceolatae 1—2 mm lata perstatae . . . . 333. *S. Seemannii*
Bracteae saepius ovato-acuminatae 3—4 mm latae perstatae vel tarde deciduae
Corollarum tubi 6—7 mm longi . 334. *S. longispicata*
Corollarum tubi 4,5—5,5 mm longi
Foliorum paginae plerumque 6 ad 12 cm longae superiores saepius pilis brevibus ramosis sparse conspersi . . . . 335. *S. fluviatilis*

Foliorum paginae plerumque 4 ad 7 cm longae pilis simplicibus vestitae . . . . 336. *S. xalapensis*
Folia late ovata 9—12 cm longa in basi truncata vel leniter cordata; plantae guatemalenses . . . . 319. *S. myriantha*

Tiliaefoliae.

Herbae annuae graciles (? rarius suffrutices) foliis amplis deltoideo-ovatis vel ovatis, in basi modo subcordatis modo rotundato-truncatis et abrupte et anguste cuneatis, plus minusve pubescentibus; bracteis vel caducis vel perstatis plerumque lanceolatis vel ovato-caudatis; calyces plerumque ad venas hispidulis vel hirtellis, rarius villosis.

301. **S. rhyacophila** Epling sp. nov. per *S. tiliaefoliae* var. *rhyacophilam* Fern., l. c., constituta est. — *S. tiliaefolia* var. *rhyacophila* Fern. in per specimen in Mexico prov. Morelos prope Cuernavaca a Pringle (no. 8381) lectum constituta est: typum in herb. Gray. vidi.

Herba annua altitudine 40—70 cm caulibus praesertim superne pilis extensis villosis; foliorum laminis late ovatis maximam partem 5—7 cm longis in apice breviter acuminatis, in basi rotundatis et ad petiolos villosos plerumque 2—5 cm longos anguste et abrupte cuneatis, paginis ambabus pilis longioribus hirsutis, marginibus crenato-serratis; floribus 3—6 in verticillastris bracteis ovato-caudatis villosis 5—10 mm longis tarde deciduis subtentis, glomerulis inter se 0,5—2 cm distantibus in spicis villosis saepius confertis dispositis; calycibus florentibus 5,5 mm longis extus villosis, in maturitate laciniis labiae inferioris 1,5—2 mm longis; corollarum tubo 3,5—4 mm longo, labia superiore 2,5 mm alta.

Mexico: Mexico: Temascaltepec, 1000 m; Morelos: Cuernavaca, 1300 m; Iturbide; Yautepec; Guerrero: Mina: Zihuagio, 1100 m; Distr. Adama: Temisca in Barranca del Consuelo, 312 m.

302. **S. leptostachys** Benth., Lab. Gen. et Sp. 258, 1833 et in DC., Prodr. 12. 308. 1848 per specimen olim in herb. Lambert., hodie in herb. horti bot. Oxon. vidi: isotypi probabiles in herb. Mus. Par. etiam in herb. hort. Matrit. sunt.

Herba annua altitudine 40—60 cm caulibus pilis appressis cinereo-puberulis; foliorum laminis rotundato-ovatis plerumque 3—6 cm diametro, in apice abrupte breviterque acuminatis, in basi rotundato-truncatis et ad petiolos graciles 1—5 cm longos abrupte et anguste cuneatis, marginibus crenato-serratis, paginis ambabus minute hirtellis cinereis; floribus 3—6 in verticillastris bracteis

perstatis lanceolato-acuminatis saepius 3—6 mm longis subtentis, glomerulis inter se 1—4 cm distantibus in spicis gracilibus interruptis 15—30 cm longis dispositis; calycibus florentibus 5—6 mm longis extus pilis brevibus appressis albo-hirtellis, in maturitate laciniis labiae inferioris 1.5—2 mm longis; corollarum tubo 4—5,5 mm longo ad basim plus minusve invaginato, labia superiore 2,5—3 mm alta.

Mexico: Morelos: Cuernavaca, 1600—2000 m; Yautepec, 1300 m; Jalisco: inter Colotlan et Plateado; Guerrero: Jaxco, 1400 m; Michoacan: Morelia: Coronilla, 2000 m: Cerro de las Nalgas, 1900 m.

303. **S. urolepis** Fern. in Proc. Am. Acad. **45**, 417, 1910 per specim. in Mexico prov. Nuevo Leon in montibus supra Monterey a Pringle (no. 11906) lectum constituta est; typum in herb. Gray. vidi.

Herba annua ut videtur elata ramis superne ascendentibus pilis appressis cinereo-pubescentibus; foliorum laminis ovatis 4—8 cm longis, in apice obtusiusculis, in basi rotundatis, pagina superiore hirtella, inferiore albo-tomentosa, marginibus crenato-serratis, petiolis 1—2,5 cm longis elatis; floribus circiter 6 in verticillastris bracteis caducis ovato-lanceolatis subtentis in spicis interruptis paniculatis 15—20 cm longis dispositis, glomerulis inter se 2—3 cm distantibus; calycibus florentibus extus appresso-hirtellis cinereis 6—7 mm longis, in maturitate labia inferiore 2—4 mm longa et pedicellis 4—8 mm longis elatis; corollarum caerulearum tubo 6 mm longo, labia superiore 4,5 mm alta.

Mexico: Tamaulipas: Sierra de San Carlos; Nuevo Leon: in montibus supra Monterey.

304. **S. uruapana** Fern. in Proc. Am. Acad. **45**, 418, 1910 per specimen in Mexico prov. Michoacan prope Uruapan a Pringle (no. 13280) lectum constituta est; typum in herb. Gray vidi. — *S. tiliaefolia* var. *cinerascens* Fern. in Proc. Am. Acad. 35, 495, 1900 per specimen in Mexico prov. Jalisco prope Guadalajara a Pringle (no. 5176) lectum constituta est; typum in herb. Gray. vidi.

Herba annua altitudine 40—60 cm caulibus superne appresso-hirtellis; foliorum laminis late deltoideo-ovatis 4—6 cm diametro, in apice breviter acuminatis, in basi rotundato-truncatis et ad petiolos 2—4 cm longos breviter et anguste cuneatis, marginibus crenato-serratis, paginis praesertim inferiore cinerea breviter et sparse pubescentibus; floribus 3—6 in verticillastris bracteis parvis lanceolato-acuminatis deciduis subtentis, glomerulis inter se 1 ad 4 cm distantibus in spicis interruptis 15—30 cm longis dispositis; calycibus florentibus 7 mm longis extus appresso-hirtellis cinereis,

in maturitate laciniis labiae inferioris 3,5—4 mm longis; corollarum tubo 5 mm longo, labia superiore 3,5 mm alta.

Mexico: Michoacan: Uruapan; Jalisco: Tuxpan; Colima: Colima.

305. **S. tiliaefolia** Vahl. Symb. Bot. 3, 7, 1794 per specimen patriae ignotae a Bellardi missum constituta est; typi icon in herb. Mus. Haun. vidi. — *S. fimbriata* Kunth in Humboldt et Bonpland, Voy., Nov. Gen. et Sp. Pl. 2, 199, t. 149, 1817 per specimen in Venezuela prope Caracas a Humboldt et Bonpland lectum constituta est; typum in herb. Mus. Berol. vidi.

Herba annua altitudine ad 1 m et ultra, caulibus superne sparse crispule hirtellis; foliorum laminis tenuibus 3—12 cm longis rotundato-ovatis breviter acuminatis, in basi rotundatis et maximam partem subtruncatis late cuneatis, utrimque praecipue subtus ad venas et ad margines itaque fimbriatis pilis appressis sparse conspersis crenato-serratis, petiolis gracilibus 2—6 cm longis elatis; floribus 3—12 in verticillastris bracteis caducis subtentis, glomerulis inter se 1—2 cm distantibus, in spicis interruptis elongatis frequenter paniculatis 15—25 cm longis dispositis; calycibus florentibus 4,5—5,5 mm longis, solum ad venas sparse subappresso-hispidulis, in maturitate 5,5—9 mm, plerumque 7—7,5 mm longis; corollarum caerulearum tubo 3,5 ad 4 mm longo, labia superiore 1—2 mm alta, inferiore 2—2,5 mm longa; staminum thecis e galea partim exsertis.

Mexico: Chihuahua; Coahuila; Sonora; Durango; Zacatecas; San Luis Potosi; Tamaulipas; Queretaro; Hidalgo; Vera Cruz; Mexico; Morelos; Michoacan. — Guatemala. — Honduras. — El Salvador. — Costa Rica. — Venezuela (Caracas). — Colombia (Antioquia, Caldas, El Cauca). — Ecuador (Huigra, Loja, Ambato).

306. **S. obvallata** Epl. in Rep. Spec. Nov., Beiheft 85, 72, 1935 per specim. in Colombiae prov. Santander inter El Roble et Torra in silvis a Killip et Smith (no. 19389) lectum constituta est; typum in herb. Mus. Smithson., isotypum in herb. Univ. Calif. (Los Angeles) vidi.

Herba annua erecta altitudine ad 1 m et ultra caulibus superne breviter pubescentibus; foliorum laminis tenuibus 5—10 cm longis, 4—10 cm latis, rotundato-ovatis, breviter acuminatis, in basi rotundatis vel truncato-subcordatis, utrimque praesertim subtus ad venas pilis appressis sparse conspersis, pagina inferiore pallidiore margine crenato-serrato, petiolis gracilibus 3—6 cm longis elatis; floribus 3—6 in verticillastris bracteis ovato-caudatis caducis 3 ad 6 mm longis hirtellis subtentis, glomerulis inter se 1—4 cm distantibus, in spicis interruptis elongatis frequenter paniculatis 15—30 cm

longis dispositis; calycibus florentibus 6—7 mm longis, extus praesertim ad venas sparse hirtellis, in maturitate 9—10 mm longis, labiis patentibus, superiore rotundata acuminata, inferioris laciniis ovatis acuminatis 2,5 mm longis, pedicellis 4—12 mm longis elatis: corollarum caerulearum tubo 5—6 mm longo sub labiam inferiorem lenissime ventricoso, labia superiore 2—2,5 mm alta, inferiore 3,5—5 mm longa.

Colombia: Santander: inter El Roble et Torra in silvis 1500—1900 m; California in collibus apertis, 2600 m; Norte de Santander: inter Pamplona et La Isla, 2000—2500 m.

307. **S. personata** Epl. in Rep. Spec. Nov., Beiheft **85**. 73. 1935 per specim. in Boliviae prov. Tarija prope Tarija in loco umbroso humoso a Fries (no. 1204) lectum constituta est; typum in herb. Mus. Stockh. vidi.

Herba annua erecta altitudine ad 1 m et ultra, caulibus superne crispule pubescentibus; foliorum laminis maximam partem 6 ad 9 cm longis, 5—6 cm latis, rotundo-ovatis, abrupte acuminatis, in basi rotundatis et ad petiolos 2—6 cm longos abrupte angustatis rarius truncatis, marginibus crenato-serratis, pagina superiore praecipue ad margines pilis appressis conspersa, inferiore pallidiore saepius ad venas solum hirtella; floribus maximam partem tribus in verticillastris bracteis 4—5 mm longis rotundato-acuminatis caducis subtentis, glomerulis inter se 1,5 ad 2,5 cm distantibus in spicis interruptis 10—30 cm longis frequenter paniculatis dispositis; calycibus florentibus 6—7 mm longis costatis extus ad venas hispidulis, in maturitate 9—11 mm longis, labiis patentibus, 3,5—4,5 mm longis ovato-acuminatis, inferioris laciniis dimidia parte connatis, pedicellis gracilibus 3—10 mm longis elatis; corollarum tubo 4,5—6 mm longo leniter ventricoso, labia superiore 2—2,5 mm alta, inferiore 4—5,5 mm longa, lacinia media 3 mm lata.

Bolivia: La Paz; Sorata, 1600—2700 m; Polopolo prope Coroico, 1100 m. Santa Cruz: in cordillera de Santa Cruz; Yunga: ad Hacienda La Florida; Milluguyau. — Argentina: Salta: Sierra Gonzalez Jujuy: Cochinoca: ad Abra Pampa, 3400 m; ad Leon, Capital, 1700 m: Tucuman: prope La Criolla.

308. **S. penduliflora** Epl. in Rep. Spec. Nov., Beiheft **85**, 70, 1935 per specim. in Peruviae prov. Cuzco in valle Lares prope Mantoc a Weberbauer (no. 7910) lectum constituta est: typum in herb. Mus. Field., isotypum in herb. Univ. Calif. (Los Angeles) vidi.

Suffrutex altitudine 1—2 m caulibus superne puberulis: foliorum laminis 4—10 cm longis, 2,5—6 cm latis, ovatis, acuminatis, in basi rotundatis, margine serrato, pagina superiore hirtella.

inferiore pallidiore molliter pubescente, petiolis 2—4 cm longis pubescentibus elatis; floribus 3—6 in verticillastris bracteis caducis 2—3 mm longis ovato-acuminatis subtentis, glomerulis inter se 1—2 cm distantibus in spicis interruptis 20—30 cm longis paniculatis dispositis; calycibus florentibus 6—7 mm longis, extus hirtellis, in maturitate 9 mm longis, labia superiore 3 mm alta rotundata mucronata, inferioris laciniis acuminatis infra medium connatis, pedicellis gracilibus 4—5 mm longis elatis; corollarum albarum vel pallide caerulearum tubo 6—7 mm longo leniter ventricoso intus nudo. labia superiore 3,5—4 mm lata, inferiore 5—6 mm longa.

This newly proposed species may prove conspecific with *S. amplifrons*. However, the habit of the Peruvian specimens is such that I hesitate to refer them there at present. The material of both species is limited and unsatisfactory. The specimens of Cook and Gilbert are referred here doubtfully but appear to differ chiefly in the larger corolla with tube 8—9 mm long.

Peruvia: Cuzco: prov. Calca in valle Lares prope Mantoc in fruticetis sempervirentibus. 2600—2700 m; Muna. 6000—8000 ped.; Huacachi prope Muna. 6500 ped.: ? prope San Miguel in valle Urubamba, 1800 m.

Glumacea.

Frutices vel suffrutices foliis plus minusve villosis vel pubescentibus saepius ovatis, in basi rotundatis et ad petiolos breviter abrupte cuneatis rarius truncatis; bracteis maximam partem parvis modo perstatis modo deciduis; calyces plus minusve pilis crassioribus articulatis villosis, interdum frequenter omnino glabratis.

A section very inadequately represented and hence difficult of interpretation: *S. fallax*, for example, is represented by two collections. one from Nayarit, one from Jalisco; one is conspicuously pubescent, the other glabrous. In no other way do they differ materially save within an expected range. *S. perplicata* may very well represent a hybrid of *S. aliena* and *S. mazatlanensis* or *S. albiflora*.

309. **S. caudata** Epling sp. nov. per specim. in Mexico prov. Nuevo Leon in montibus ad Monterey prope La Mina a Mueller (no. 143) lectum constituta est, typum in herb. Mus. Field. vidi.

Herba perennis ut videtur caulibus superne fere glabris sparsissime hirtellis gracilibus; foliorum laminis late ovatis 5 ad 8 cm longis, in apice caudato-acuminatis, in basi rotundatis, petiolis gracilibus 1—5 cm longis elatis, marginibus serrulatis, paginis ambobus glabris nisi sparse hirtellis; floribus tribus in

verticillastris bracteis glumaceis tarde deciduis viridibus ciliatis subtentis, in spicis interruptis 8—10 cm longis elatis: calycibus florentibus extus glabris venis costatis 9 mm longis: corollarum caerulearum tubo 12 mm longo, superne ventricoso labia superiore 4,5 mm alta, inferiore duplo longiore.

Mexico: Nuevo Leon: La Mina prope Monterrey.

310. **S. roscida** Fern. in Proc. Am. Acad. 35, 517, 1900 per specimen in Mexico prov. Durango prope Chacala a Goldman (no. 340) lectum constituta est; typum in herb. Gray., isotypos in herb. Smithson. et horti bot. Nov. Eborac. vidi.

Herba ut videtur ramulis gracilibus pilis brevibus extensis glandulosis et longioribus pilosis vestitis; foliorum laminis ovatis 8—12 cm longis tenuibus in apice acuminatis, in basi rotundatis et ad petiolos graciles 3—5 cm longos abrupte cuneatis, marginibus serratis, pagina superiore pilis longioribus sparsissime hirtella, inferiore glabra nisi minutissime ad venas puberula; floribus 6 et ultra in verticillastris bracteis rotundatis chartaceis tarde deciduis subtentis in spicis interruptis gracilibus 15—30 cm longis dispositis, glomerulis demum inter se 1—3 cm distantibus; calycibus florentibus extus pilis minutis glandulosis et ad venas longioribus paucis extensis vestitis 8 mm longis, labiis acutissimis, superiore in maturitate erecto-recurvata: corollarum tubo 8 mm longo, labia superiore 5 mm alta, inferiore 7 mm lata.

Mexico: Durango: Chacala.

311. **S. fallax** Fern. in Proc. Am. Acad. 45. 419, 1910 per specimen in Mexico prov. Nayarit ad oppidum Tepic a Palmer (no. 1964) lectum constituta est; typum in herb. Gray., isotypos plures vidi.

Frutex altitudine ad 2 m, ramulis nunc praesertim inter flores villosulis nunc minutissime puberulis; foliorum laminis ovatis 4—9 cm longis, acuminatis, in basi rotundato-angustatis, saepius cuneatis, petiolis 1—2 cm longis elatis, marginibus crenato-serratis, paginis ambabus nunc hirsutis nunc minutissime puberulis fere glabris; floribus 3—6 in verticillastris bracteis caducis subtentis in spicis interruptis 10—25 cm longis approximatis, glomerulis demum inter se 0,5—1,5 cm distantibus; calycibus florentibus extus nunc hirsutis nunc glabris 5—6 mm longis; corollarum cyanearum tubo 6—7 mm longo, labia superiore 5 mm alta.

This species exhibits two well defined forms: the type is definitely hirsute; Mexia's plants from Jalisco are very minutely puberulent, otherwise glabrous. There appear to be no other noteworthy differences.

Mexico: Jalisco: San Sebastian in silvis, Hacienda del Otolal, 1500 m; Nayarit: Tepic.

312. **S. arthrocoma** Fern. in Proc. Am. Acad. 43, 63, 1907 per specimen in Mexico prov. Hidalgo in angustiis infra ferro-fabricam Trinidad a Pringle (no. 8940) lectum constituta est; typum in herb. Gray., isotypos plures vidi.

Herba perennis vel frutex ramulis pilis crassiusculis sparse villosis; foliorum laminis ovatis 5—12 cm longis, in apice acuminatis, in basi rotundatis et ad petiolos villosos 1—5 cm longos abrupte cuneato-angustatis, marginibus crenato-serratis, paginis ambabus pilis crassiusculis sparse villosis; floribus circiter tribus in verticillastris bracteis caducis membranaceis villosis subtentis, glomerulis approximatis in spicis interruptis brevibus 5—10 cm longis dispositis: calycibus florentibus extus pilis crassiusculis villosis 7 mm longis; corollarum ut videtur albarum tubo 7 mm longo, labia superiore 3,5—4 mm longa, inferiore longiore; stylo glabro.

Mexico: Hidalgo: in angustiis infra ferrofabricam Trinidad, 1800 m.

313. **S. remissa** Epling sp. nov. per specimen in Mexico prov. Jalisco prope San Sebastian in Segundo Arroyo a Mexia (no. 1559) lectum constituta est; typum in herb. Univ. Calif. (Berkeley), isotypos in herb. Acad. Sci. Calif. et horti bot. nov. Eborac. vidi.

Frutex altitudine ad 1 m, ramulis appresso-hirtellis inter flores villosis; foliorum laminis tenuibus ovatis plerumque 6—12 cm longis, in apice breviter acuminatis, in basi ad petiolos graciles plerumque 2—6 cm longis cuneato-angustatis, marginibus convexioribus serrulatis, paginis ambabus sparse villosis; floribus maximam partem tribus in verticillastris bracteis deltoideis perstatis subtentis, glomerulis inter se 0.5—1 cm distantibus in spicis remissis villosis 5—10 cm longis dispositis: calycibus florentibus 4—5 mm longis tenuibus extus villosis: corollarum tubo sat ventricoso 6 mm longo, labia superiore 3.5—4.5 mm alta.

Mexico: Sinaloa: Mazatlan: Jalisco: San Sebastian. Segundo Arroyo. 1500 m.

314. **S. fusca** Epling sp. nov. per specimen in Mexico prov. Guerrero prope El Carrizal a Langlassé (no. 216) lectum constituta est; typum in herb. Smithson., isotypum in herb. Kew. vidi.

Frutex aromatica ut videtur altitudine 1 m, ramulis ad sulcos pubescentibus superne praesertim inter flores villosis; foliorum laminis siccis fuscis rhomboideo-ovatis 2,5—6 cm longis, in apice breviter acuminatis, in basi ad petiolos 1—3 cm longos cuneato-angustatis, interdum marginibus serratis, pagina superiore hirtella, inferiore molliter pubescente; floribus maximam partem tribus in verticillastris bracteis tarde deciduis deltoideis subtentis,

glomerulis inter se 0,5—1 cm distantibus in spicis laxis villosis 5—15 cm longis dispositis; calycibus florentibus 4,5—5 mm longis extus villosis; corollarum tubo sat ventricoso 4—4,5 mm longo, labia superiore 4 mm alta.

Mexico: Guerrero: El Carrizal: inter Copala et Juchitango, 100—200 m.

314a. **S. languidula** Epling sp. nov. per specim. in Mexico prov. Guerrero in regione Montes de Oca in silvis inter Petatlan et Murga a Hinton (no. 10351) lectum constituta est; typum in herb. Univ. Calif. (Los Angeles) et isotypum in herb. Kew. vidi.

Suffrutex languidulus ut videtur ramulis tenuibus debilibus glabris; foliorum membranaceorum laminis ovatis 2,5—6 cm longis, in apice obtusiusculis vel breviter acuminatis, in basi saepius cuneatis, marginibus irregulariter crenato-serratis, pagina superiore sparse hirtella, inferiore glabra, petiolis gracilibus 2—3,5 cm longis; floribus 3—6 in verticillastris bracteis lanceolatis perstatis ciliatis 5—6 mm longis subtentis in spicis laxis tenuibus 5—8 cm longis, glomerulis inter se 0,5—1,5 cm distantibus dispositis; calycibus florentibus 5,5—6 mm longis extus ad venas pilis longioribus sparse villosis; corollarum caerulearum tubo 5 mm longo ad basim leniter invaginato, labia superiore 4—4,5 mm alta.

Mexico: Guerrero: Montes de Oca, in silvis inter Petatlan et Murga.

315. **S. mucidiflora** Fernald in Proc. Am. Acad. 43, 63, 1907 per specimen in Mexico prov. Durango prope San Ramon a Palmer (no. 187) lectum constituta est; typum in herb. Gray., isotypos in herb. Smithson. et Univ Calif. (Berkeley) vidi.

Herba perennis vel suffrutex altitudine 60 cm et ultra superne divaricato-ramosus, ramulis infime pilis appressis pubescentibus, superne inter flores pilis extensis coloratis villosis dense vestitis, internodiis 3—15 cm longis; foliorum laminis ovatis 3—6 cm longis, in apice leniter acuminatis etiam acutis ad basin rotundatis vel rotundato-angustatis, petiolis 0,5—2 cm longis elatis, margine serrulato, paginis ambabus praesertim inferiore molliter pubescentibus; floribus plerumque tribus in verticillastris bracteis villosis tarde deciduis subtentis, glomerulis approximatis in ramulis brevibus axillaribus instructis, pedicellis 2—3 mm longis elatis; calycibus florentibus 5—6 mm longis, extus pilis longioribus coloratis villosis, in maturitate 8 mm longis; corollarum tubo 7,5 mm longo, labia superiore 5 mm alta, inferiore 7 mm longa.

Mexico: Durango: San Ramon.

316. **S. prasiifolia** Benth., Bot. Voy. Sulph. 151. 1844 per specimen in Mexico prov. Nayarit inter San Blas et Tepic a

Sinclair lectum constituta est; typum in herb. Kew., isotypum in herb. Univ. Calif. (Los Angeles) vidi.

Herba gracilis ut videtur perennis caulibus ad sulcos minute pubescentibus internodiis elongatis; foliorum laminis tenuibus rhomboideo-ovatis 3—5 cm longis, in apice acutis, in basi integro-cuneatis, petiolis gracilibus 1—2 cm longis elatis, marginibus grande serratis, paginis ambabus glabratis; floribus 1—3 in verticillastris bracteis lineari-lanceolatis perstatis subtentis glomerulis demum inter se 1—2 cm distantibus in racemis gracilibus 4—6 cm longis dispositis; calycibus florentibus 4.5—6 mm longis extus pilis crassioribus sparse villosis; corollarum tubo 7—8 mm longo, ad basim valde invaginato, labia superiore 5,5—6 mm alta.

Mexico: Nayarit: inter San Blas et Tepic.

317. **S. aliena** Greene in Pittonia 1, 157, 1888 per specim. in insula Maria Madre a Fisher lectum constituta est; typus olim in herb. Acad. Calif. perditus est; isotypum in herb. Univ. Calif. (Berkeley) vidi.

Herba perennis caulibus utrimque molliter pubescentibus et frequenter pilis longioribus conspersis, internodiis elongatis; foliorum laminis 3—5 cm longis deltoideo-ovatis, in apice acuminatis, in basi truncato-subcordatis, petiolis 1—2 cm longis elatis, marginibus grande serrato-dentatis, pagina superiore molliter hirtella, inferiore dense pubescente; floribus 1—3 in verticillastris bracteis lanceolatis perstatis subtentis, glomerulis 0,5—1 cm distantibus in racemis vel spicis laxis 2—5 cm longis dispositis; calycibus florentibus 6 mm longis extus vel glabris vel pilis crassioribus villosis; corollarum tubo 7—8 mm longo, ad basim valde invaginato, labia superiore 5.5—6 mm alta.

The several specimens from Maria Madre Island are relatively uniform in the shape of leaf and pubescence; it has accordingly seemed desirable to retain this species until more evidence is at hand. The flowers are identical with those of *S. prasiifolia*.

Mexico: Maria Madre Island.

318. **S. perplicata** Epling sp. nov. per specimen. in Mexico prov. Sinaloa prope Villa Union a Rose (no. 13876) lectum constituta est; typum in herb. Smithson., isotypum in herb. horti bot. nov. Eborac. vidi.

Herba verisimiliter perennis virgata caulibus superne pubescentibus internodiis elongatis; foliorum laminis omnino habitu *Salviae alienae* 2—4 cm longis, deltoideo-ovatis, in apice acuminatis, in basi truncatis vel late cuneatis, petiolis plerumque 1—1,5 cm longis elatis, marginibus grande serratis, pagina superiore hirtella, inferiore molliter pubescente; floribus habitu *Salviae albiflorae* 6—9 in verticillastris bracteis perstatis subtentis,

glomerulis inter se circiter 1 cm distantibus in spicis interruptis strictis 8—25 cm longis dispositis; calycibus florentibus 4—5,5 mm longis ad venas sparsissime brevissime hirtellis; corollarum tubo vix 4 mm longo, labia superiore 3—3.5 mm alta.

Mexico: Sinaloa: Villa Union; Mazatlan; Guadaloupe.

Fruticosae.

Frutices foliis ovatis in basi rotundatis etiam subcordatis plus minusve pubescentibus; bracteis parvis deciduis vel caducis, labiis frequenter brevibus; calycibus ad venas hispidulis.

S. myriantha, while appearing of close alliance to the members of subsection *Iliantes* in respect to its flowers, appears also of some relationship to the several species, mostly Brasilian which form the major portion of this group.

319. **S. myriantha** Epling sp. nov. per specimen in Guatemala inter Colombia et Quezaltenango a Skutch (no. 1971) lectum constituta est; typum in herb. Univ. Calif. (Los Angeles) vidi.

Frutex altitudine fere ad 3 m intricate ramosus ramulis superne hirtellis interdum villosis; foliorum laminis late ovatis 9—12 cm longis, in apice breviter acuminatis etiam obtusis, in basi truncatis vel leniter cordatis, petiolis 3—8 cm longis, paginis ambabus hirtellis, marginibus crenato-serratis; floribus 6—12 et ultra in verticillastris bracteis caducis subtentis, glomerulis inter se 1—2 cm distantibus in spicis interruptis numerosis paniculatis 5—25 cm longis dispositis; calycibus florentibus hirtellis 8—9 mm longis; corollarum pallidarum tubo 9—10 mm longo, labia superiore 5 mm alta.

A second collection by Skutch in Huehuetenango at San Juan Atitan is similar but more villous throughout and with distinctly cordate leaves. The flowering calyces are slightly smaller and show a lovely combination of green and rose color. It seems to be, at most, a variant of this species.

Guatemala: inter Colomba et Quezaltenango.

320. **S. haitiensis** Urb. in Rep. Spec. Nov. 19, 306, 1924 per specim. in Haiti in Montagne Noire in sylva aperta a Buch (no. 2089); typum in herb. Mus. Berolin. vidi.

Frutex altitudine 1—3 m ramulis glabris glandulis sessilibus conspersis; foliorum laminis elliptico-ovatis, 3—6 cm longis, in apice acutiusculis, in basi ad petiolos 3—5 mm longos cuneato-extenuatis, marginibus serratis, paginis ambabus glabris; floribus 3—6 in verticillastris bracteis glabris caducis subtentis, in spicis interruptis axillaribus 5—8 cm longis dispositis, glomerulis inter se 1—1,5 cm distantibus; calycibus florentibus

glabris glandulis sessilibus conspersis 6,5—7 mm longis; corollarum tubo 7—7,5 mm longo, labia superiore 4,5—5 mm alta.

Haiti: Massif de la Selle: Montagne Noir, 1800 m; Morne Tranchant, 1800 m.

321. **S. intonsa** Epl. in Rep. Spec. Nov., Beiheft 85, 74, 1935 per specim. in Colombiae prov. Santander prope California a Killip et Smith (no. 16971) lectum constituta est; typum in herb. Mus. Smithson., isotypum in herb. Univ. Calif (Los Angeles) vidi.

Frutex (?) scandens ramis arcuato-ascendentibus prominule rufo-villosis; foliorum laminis 6.5—13 cm longis, 22—40 mm latis, maximam partem rhomboideo-ellipticis, frequenter elliptico-lanceolatis, acutis, margine supra medium recta infra medium saepius leniter concava, in basi ad petiolum obscurum 5—15 mm longum rufo-villosum angustatis, margine crenato-serrato, paginis ambabus hirsuto-villosis viridibus; floribus 3—6 in verticillastris bracteis lanceolato-acuminatis villosis caducis subtentis, glomerulis demum 5—8 mm inter se distantibus, in spicas interruptas breves saepe axillares dispositis; calycibus florentibus extus sparse hirtellis 8 mm longis, in maturitate 10—11 mm longis, labia superiore et inferiore laciniis acuminatis subcaudatis 4—4,5 mm longis, pedicellis 2—3 mm longis elatis; corollarum rosearum tubo 7 mm longo valde ventricoso et paulo infra medium invaginato intus nudo, labia superiore 4,5—5 mm alta, inferiore breviore vel subaequilonga.

Colombia: Santander: prope California, 2800 m.

322. **S. arenaria** St. Hil. ex Benth., Lab. Gen. et Sp. 257, 1833 et in DC., Prodr. 12, 306, 1848 per specim. in Brasiliae prov. Minas Geraes in arenosis Serra Negra a St. Hilaire (no. 158) lectum constituta est; typum verum non reperire potui; specim. vera in herb. Mus. Par. et Univ. Calif. (Los Angeles) vidi. — *S. montana* Gardn. ex Field., Sert. Pl. sub t. 20, 1844 per specim. in Brasiliae prov. Rio Janeiro in praeruptis saxosis ad culmina montium Orgãos a Gardner (no. 578) lectum constituta est; typum in herb. Mus. Brit., isotypum in herb. Kew., Delessert. et Univ. Calif. (Los Angeles) vidi (non Salisb. Prodr. 74, 1796).

Frutex altitudine ad 2 m etiam arbuscula, ramis puberulis; foliorum laminis 5—10 cm longis, 1,5—4 cm latis, ellipticis, leniter acuminatis, in basi angustatis acutiusculis, margine serrata, pagina superiore hirtella, inferiore praesertim ad venas puberula fere glabra, petiolis 8—15 mm longis elatis; floribus circiter tribus in verticillastris bracteis ovato-lanceolatis hirtellis 8—12 mm longis tarde deciduis subtentis, glomerulis demum inter se 5—8 mm distantibus, in spicis interruptis subsecundis 5—10 cm

longis fasciculato-paniculatis dispositis; calycibus florentibus extus ad venas sparsissime hirsutis mox glabris 9—10 mm longis, in maturitate 12 mm longis, labia superiore rotundato-acuminata 3—4 mm longa, inferiore laciniis ad medium et ultra connatis subaequilongis, pedicellis 3 mm longis elatis; corollarum rosearum tubo 9—11 mm longo, ad basim et sub labia inferiore invaginato ventricoso intus nudo, labia superiore 4,5—6 mm alta, inferiore 6 mm diametro.

Brasil: Minas Geraes: in Serra Negra in arenosis; in Serra de Caparão; Rio Janeiro: in Serra dos Orgãos, 5000—6000 ped.; São Paulo: in Campo do Jordão, 1600 m, in silvulis; São Francisco dos Campos.

323. **S. itatiaiensis** Dusén in Arch. Mus. Nac. Rio de Janeiro 13, 34, 1903 per specimina in Brasiliae prov. Rio Janeiro in Serra do Itatiaia a Dusén lecta constituta est; specimina vera in herb. Mus. Stockh. vidi. — *S. arenaria* var. *Sellowiana* Benth. in DC., Prodr. 12, 306, 1848 per specim. in Brasilia a Sellow lectum constituta est; specim. vera in herb. Berolin. et Univ. Calif. (Los Angeles) vidi.

Frutex altitudine ad 3 m ramulis superne villosulis; foliorum laminis sat tenuibus 4—8 cm longis, 2—4,5 cm latis, ovatis, breviter acuminatis, in basi pulchre rotundatis, petiolis villosis 1—4 cm longis elatis, margine serrato, pagina superiore nunc glabra nunc hirtella, inferiore ad venas villosula; floribus 3—6 in verticillastris bracteis late ovatis acuminatis caudatisve tarde deciduis 5—10 mm longis subtentis, glomerulis inter se 1—2 cm distantibus in spicas interruptas demum 10—20 cm longas villosas approximatis; calycibus florentibus extus ad venas sparse hirsutis 9—10 mm longis, in maturitate membranaceis 11 mm longis, labia superiore rotundata mucronata 2—3 mm longa, inferiore paulo longiore laciniis ad medium et ultra connatis, pedicellis 3—5 mm longis elatis; corollarum rosearum tubo 9—12 mm longo ad basim et sub labia inferiore invaginato ventricoso intus nudo, labia superiore 5—7 mm alta, inferiore 6—7 mm diametro.

Brasil: Rio Janeiro: Serra do Itatiaia: Mancieras: Retiro ad marginem silvulae; Rio Preto; São Paulo: Campos do Jordão in silvulis, 1600 m.

324. **S. nemoralis** Dusén ex Epl. in Rep. Spec. Nov., Beiheft 85, 75, 1935 per specim. in Brasiliae prov. Rio Janeiro in Serra do Itatiaia ad Retiro in silvula a Dusén (no. 2000) lectum constituta est; typum in herb. Mus. Stockh. vidi.

Frutex ut videtur ramis villosis; foliorum laminis 5—7 cm longis, 2,5—3,5 cm latis, ovatis, in apice acuminatis in basi pulchre

rotundatis, petiolis villosis 1,5—2,5 cm longis elatis, margine crenato-serrato, paginis ambabus viridibus utrimque sparse villosis; floribus 3 in verticillastris bracteis ovato-caudatis membranaceis 8—12 mm longis caducis subtentis, glomerulis demum inter se 1—3 cm distantibus in spicis interruptis 3—10 cm longis villosis dispositis, pedicellis 3—4 mm longis elatis; calycibus florentibus 7—8 mm longis extus sparse villosis, in maturitate 13—14 mm longis sat tenuibus saepe rubris, labia superiore rotundata mucronata, inferioris laciniis acuminatis; corollarum rosearum tubo 21 mm longo leniter ventricoso intus nudo, labia superiore 7 mm longa, inferiore subaequilonga.

Brasilia: Rio Janeiro: in Serra do Itatiaia in silvula 2100 m.

325. **S. consimilis** Epl. in Rep. Spec. Nov., Beiheft 85, 75, 1935 per specim. in Brasiliae verisimiliter prov. Parana a Sellow (no. 4518) lectum constituta est; typum in herb. Mus. Berolin. vidi.

Herba perennes ut videtur caulibus superne hirtellis fere glabris gracilibus; foliorum laminis 3—5 cm longis, 1,5—3 cm latis, deltoideo-ovatis, acutis, in basi rotundatis, petiolis gracilibus irrasis 8—15 mm longis elatis, margine supra medium subrecto, crenato-serrato, pagina superiore fere glabra sparse hispidula, inferiore pallidiore fere glabra ad venas hispidula; floribus 1—3 in verticillastris bracteis ovato-caudatis glabris caducis subtentis, glomerulis inter se 1—1,5 cm distantibus, in spicis interruptis 10—15 cm longis dispositis; calycibus florentibus 8—8,5 mm longis extus ad venas hispidulis, tubo 5 mm longo, labiis consimilibus ambabus integris acutissimis acuminatis 3,5 mm longis, in maturitate paulo auctis hiantibus, inferioris laciniis ad medium connatis tubo 6 mm longo; corollarum tubo 7—8 mm longo sat ventricoso sub labia inferiore et ad tubi basim subtus invaginato, labia superiore 4 mm longa, inferiore subaequilonga.

Brasilia: (?) Parana.

Rudes.

Herbae (?) perennes rudes altitudine plerumque 1 m et ultra saepius pubescentes rarius glabrae; foliorum laminis ellipticis vel ovato-ellipticis, in basi cuneatis etiam extenuatis; bracteis modo parvis perstatis modo deciduis vel caducis; calycibus vel hispidulis vel glabris.

A complex difficult of satisfactory segregation. Save in pubescence and general habit *S. xalapensis* is very similar to *S. angulata* of Venezuela. *S. fluviatilis* is scarcely separable save in the branched hairs on the upper leaf surface; at the same time it leans strongly toward *S. longispicata* in habit. *S. longispicata* and *S. albiflora* are clearly defined, but both are difficultly separable

from *S. Seemannii*. The former is very close to *S. laxispicata* of Venezuela. *S. mazatlanensis* differs from *S. albiflora* chiefly in habital aspect, the leaves being thinner, more coarsely serrate and the bracts smaller and more attenuate. The latter is very close to *S. longimarginata* of Venezuela.

326. **S. laxispicata** Epl. in Rep. Spec. Nov., Beiheft 85, 69, 1935 per specim. in Venezuelae Andibus Trujillo et Merida inter La Puerta et Timotes a Jahn (no. 1142) lectum constituta est: typum in herb. Smithson. vidi.

Frutex ramis sparse pubescentibus: foliorum laminis 5—8 cm longis, 2—2,5 cm latis, elliptico-lanceolatis vel anguste ovatis, in apice longe leniterque acuminatis in basi angustatis interdum ad petiolos 1—2 cm longos acuminatis, marginibus serrulatis, paginis ambabus fere glabris sparse pubescentibus; floribus 6—12 in verticillastris bracteis 2—3 mm longis ovato-acuminatis subtentis in spicis interruptis 6—9 cm longis verisimiliter numerosis lateralibus dispositis, glomerulis inter se 0,5—2 cm distantibus; calycibus florentibus 6—7 mm longis extus pilis mollibus sparse conspersis in maturitate 8—8,5 mm longis labiis hiantibus superiore acuminata, inferioris laciniis subcaudatis, corollarum caerulearum tubo 6—7 mm longo supra medium ventricoso, labia superiore 4 mm alta, inferiore paulo longiore.

Venezuela: inter La Puerta et Timotes, 2000 m.

327. **S. sphacelioides** Benth. in DC., Prodr. 12, 337, 1848 per specim. in Colombiae prov. Magdalena in Sierra Nevada de Sta. Marta a Purdie lectum constituta est; typum in herb. Kew., isotypum in herb. Univ. Calif. (Los Angeles) vidi. — *S. viridifolia* Rusby, Descript. New Sp. S. Am. Pl., 110, 1920 per specim. in Colombiae prov. Magdalena in Sierra Nevada de Sta. Marta prope Las Nubes a H. H. Smith (no. 1381) lectum constituta est; typum in herb. horti bot. Nov. Eborac., isotypos in herb. Mus. Par., Gray., horti bot. Missour., Smithson., et Stockh. vidi. — *S. caracasana* Briq. in Ann. Conserv. et Jard. Bot. Genève 2, 147, 1898 per specim. in Venezuela ad San Sebastian prope Caracas a Funck (no. 278) lectum constituta est; typum in herb. Delessert., isotypos in herb. Mus. Par. et Bruxell. vidi.

Frutex altitudine ad 2 m ramis glabratis superne tomentoso-villosis; foliorum laminis 5—12 cm longis, 2—6 cm latis, ellipticis vel lanceolatis, in apice leniter acuminatis, in basi saepius ad petiolos 1—2 cm longos pubescentes angustatis, margine serrulato, pagina superiore hirtella, inferiore cinereo-pubescente demum subglabra; floribus 6—12 in verticillastris bracteis lanceolatis acuminatis hirsutis tarde deciduis 8—15 mm longis subtentis, glomerulis inter se 5—10 mm distantibus, in spicas

subinterruptas 10—15 cm longas confertis; calycibus florentibus 8—10 mm longis, extus hirtellis, in maturitate 11—12 mm longis, labia superiore rotundato-acuminata, inferioris laciniis paulo longioribus acuminatis caudatis infra medium connatis, pedicellis 3—4 mm longis elatis: corollarum tubo intus nudo, 13—14 mm longo, superne leniter ventricoso, labia superiore 3—3,5 mm alta, inferiore subaequilonga.

Venezuela: San Sebastian prope Caracas, 6000 ped. — Colombia: in Sierra Nevada de Santa Marta: Rio Hacha, Sierra Nevada 10000 ped.; Vista Nieve, Santa Marta: in apricis ad rivuli marginem prope Las Nubes, 4500 ped.; San Miguel in Sierra Nevada de Santa Marta.

328. **S. angulata** Benth., Lab. Gen. et Sp. 721, 1835 et in DC., Prodr. 12, 309, 1848 per specim. in Venezuela prope Caracas a Vargas (no. 74) lectum constituta est; typum in herb. DC. vidi. — ? *S. tovariensis* Briq. in Ann. Conserv. Genève 2, 430, 1898 per specim. in Venezuela prope coloniam Tovar a Fendler (no. 876) lectum constituta est; typum in herb. Delessert. vidi.

Suffrutex ramulis molliter pubescentibus; foliorum laminis 6—12 cm longis, 3—6 cm latis, ovatis, in apice acutis vel breviter acuminatis, in basi ad petiolos 2—4 cm longos extenuatis, margine serrato, pagina superiore sparse hirtella, inferiore cinereo-pubescente; floribus 3—6 in verticillastris bracteis ovato-caudatis 5—8 mm longis caducis subtentis, glomerulis inter se 0,5—1,5 cm distantibus in spicis interruptis 5—20 cm longis dispositis; calycibus florentibus 4.5—6 mm longis extus ad venas plus minusve pubescentibus, in maturitate 5.5—6.5 mm longis, labia superiore recurvo-erecta acuminata 2—2.5 mm alta, pedicellis 2—3 mm longis elatis; corollarum pallide caerulearum tubo 5 mm longo ventricoso intus nudo, labia superiore 4 mm alta, inferiore 5—6 mm longa.

Fendler 876 upon which *S. tovariensis* is based is a mixed number. The type is apparently referable to this species although some specimens of the same number are referable to *S. longimarginata*. *S. angulata* is very closely allied to *S. longimarginata* from which it differs principally in the pubescence and bracts.

Venezuela: Caracas; Timotes, Merida, 2000 m.

329. **S. longimarginata** Briq. in Ann. Conserv. et Jard. bot. Genève 2, 127, 1898 per specimen in Venezuelae prov. Bermudez prope Cararipe a Funck (no. 117) lectum constituta est; typum in herb. Delessert. vidi. — *S. tenuistachya* Rusby, Descr. New Sp. S. Am. Pl. 109, 1920 per specimen in Colombiae prov. Magdalena ad Jiracasaca a H. H. Smith (no. 1370) lectum constituta est; typum in herb. horti bot. Nov. Eborac. vidi.

Herba perennis vel suffrutex erectus altitudine 1—2 m, caulibus fere glabris, superne sparse hirtellis, internodiis 5—10 cm longis; foliorum laminis 6—12 cm longis, late ovatis, in apice acutis vel breviter acuminatis, in basi extenuatis et ad petiolos 3—8 cm longos longe decurrentibus, margine serrato, paginis ambabus fere glabris, inferiore ad venas hirtella; floribus 3—6 in verticillastris bracteis 2—3 mm longis perstatis subtentis, glomerulis inter se 1—2 cm distantibus in spicis interruptis paniculatis 20—30 cm longis dispositis; calycibus florentibus 4,5—5,5 mm longis extus sparse hispidulis in maturitate 6 mm longis; corollarum caerulearum tubo 4—5 mm longo labia superiore 2,5—3 mm alta.

Panama: sine loco. — Venezuela: Ibaa. Yaracuy, 450 m, in silvis; La Victoria, 450 m; La Guayra, Caracas; Quebrada de las Comadres, las Mostages, Miranda, 800 m; Colonia Tovar, 4000 ped.; Curucuti, Caracas-La Guaira; El Valle: in umbrosis ad cursum inferiorem fluminis Cotiza, Caracas, 800—1200 m; in regione Antimano, Caracas, 3000—3500 ped.; prope Barquisimeto, Lara. — Colombia: Magdalena: in silvis prope Calavasa; in apertis silvarum prope Jiracasaca. 2500 ped.

330. **S. bogotensis** Benth. in DC., Prodr. **12**, 312, 1648 per specim. in Colombiae prov. Cundinamarca prope Bogota a Goudot lectum constituta est; typum in herb. Kew. vidi.

Herba altitudine 40—80 cm, caulibus pubescentibus; foliorum laminis 4—9 cm longis, 1,5—2,5 cm latis, oblongo-ovatis in apice acutis interdum obtusiusculis, in basi plerumque angustatis etiam ad petiolos 1—2,5 cm longos extenuatis, margine serrulato, pagina superiore cinereo-viridi hirtella, inferiore plus minusve pubescente etiam incana, ambabus mollibus; floribus 6—12 in verticillastris bracteis ovato-lanceolatis acuminatis tarde deciduis pubescentibus 5—10 mm longis, glomerulis inter se 0,5—1,5 cm distantibus supremis confertis in spicas interruptas 5—10 cm longas dispositis, pedicellis 2—2,5 mm longis elatis; calycibus florentibus extus pilis extensis brevibus molliter pubescentibus 5,5—6 cm longis, in maturitate 6,5—7 mm longis; corollarum caerulearum tubo 5,5 mm longo ventricoso intus nudo, labia superiore 3 mm alta, inferiore 3,5 mm diametro.

Colombia: Cundinamarca ad Fute in altaplanitie Bogotensi; Santander: in valle fluminis Surata inter El Jaboncillo et Surata, in declivitate arida, 1500—1800 m.

331. **S. albiflora** Mart. et Gal. in Bull. Acad. Brux. 11, II. 76, 1844 per specimen in Mexico prov. Vera Cruz prope Zacuapan a Galeotti (no. 612) lectum constituta est; typum in herb. Acad. Brux., isotypum in herb. Kew. vidi. — *S. Jurgensenii* Briq. in

Ann. Conserv. et Jard. bot. Genève 2, 144, 1898 per specimen in Oaxaca ad Pinotepa Nacional a Jürgensen (no. 184) lectum constituta est; typum in herb. Deless. vidi.

Herbae (?) perennes altitudine 1 m et ultra caulibus gracilibus glabris, modo in sulcis sparse pubescentibus; foliorum laminis plerumque 3—8 cm longis saepius rhomboideo-ovatis, in apice saepius acuminatis, in basi cuneato-angustatis rarius subtruncatis petiolis 1—4 cm longis elatis, marginibus crenato-serratis, paginis ambabus glabris; floribus 3—6 in verticillastris bracteis glabris deltoideo-lanceolatis perstatis subtentis, glomerulis plerumque inter se 1—1,5 cm distantibus in spicis interruptis gracilibus elongatis 15—30 cm longis dispositis; calycibus florentibus extus glabris nisi ad venas sparsissime minutissime hispidulis 4—5,5 mm longis; corollarum tubo 3,5—6 mm longo, labia superiore 3 ad 4,5 mm alta.

Mexico: Vera Cruz: Jalapa; Orizaba; Zacuapan; Catemaco; Mirador; Oaxaca: Pinotepa Nacional; Rincon Antonio; Santo Domingo; Chiapas: Escuintla; Tabasco: San Juan Batista ad Mayacal. — Guatemala: Los Amates; Quirigua (Izabal). — Honduras: Tela: Atlantida; Yoro: Progresso, Quebrada Seca; Santa Barbara: San Pedro Sula; Rio Esperanza. — Panama: Saca.

332. **S. mazatlanensis** Fern. in Proc. Am. Acad. 35, 515, 1900 per specimen in Mexico prov. Sinaloa ad fontes fluminis Mazatlan a Wright (no. 1298) constituta est; typum in herb. Gray., isotypum in herb. Univ. Calif. (Berkeley) vidi.

Herba ? perennis suffruticosa altitudine ad 1 m utrimque glabrata; foliorum laminis tenuibus plerumque 3—6 cm longis saepius rhomboideo-ovatis, in apice saepius acuminatis, in basi ad petiolos graciles plerumque 3—5 cm longos cuneato-angustatis, marginibus pro rata grande serratis, paginis ambabus glabris; floribus 3—6 in verticillastris bracteis minutis ovato-acuminatis perstatis glabris subtentis, glomerulis inter se 1—1,5 cm distantibus in spicis interruptis gracilibus elongatis 15—30 cm longis dispositis; calycibus florentibus extus glabris nisi ad venas sparsissime minutissime hispidulis 4—5.5 mm longis; corollarum ? albarum tubo 3,5—6 mm longo, labia superiore 3—4,5 mm alta.

Scarcely separable from *S. albiflora* save in the thinner, more coarsely serrate leaves, and the somewhat more ovate bracts.

Mexico: Sinaloa: Arroyo de las Trancas, San Ignacio; La Noria, 250 m; Mazatlan, Cerro del Vigia.

333. **S. Seemannii** Fern. in Proc. Am. Acad. 35, 516, 1900 per specimen in Mexico in montibus Sierra Madre dictis a Seemann (no. 2075) lectum constituta est; typum in herb. Gray., isotypos

in herb. Kew. et Univ. Calif. (Los Angeles) vidi. — *S. albiflora* forma *caerulescens* Gray in Proc. Am. Acad. 21, 408, 1886 per specimen in Mexico prov. Chihuahua prope Batopilas a Palmer (no. 154) lectum constituta est; typum in herb. Gray. vidi. — *S. albiflora* var. *caerulescens* Gray ex Wats. in Proc. Am. Acad. 22, 445, 1887 per specimen idem constituta est.

Herba perennis ut videtur verisimiliter suffruticosa utrimque glabrata caulibus superne pilis brevibus sparse hirtellis; foliorum laminis rhomboideo-ovatis in apice acuminatis in basi ad petiolos 2—5 cm longos cuneato-angustatis, marginibus serratis, paginis ambabus hirtellis fere glabris; floribus plerumque tribus in verticillastris bracteis perstatis lanceolato-acuminatis glabris subtentis in spicis gracilibus interruptis paniculatis 15—40 cm longis dispositis; calycibus florentibus 5.6—6.5 mm longis dispositis; calycibus florentibus 5.5—6.5 mm longis extus sparse hirtellis fere glabris; corollarum caerulearum tubo 6—6,5 mm longo, labia superiore circiter 4 mm alta.

Scarcely separable from *S. albiflora* save in habit and corolla color, and from *S. mazatlanensis* by similar considerations and the shape of the bracts.

Mexico: Chihuahua; Rio Mayo: Loreto, Sierra Canelo, Guasaremos, Hacienda San Miguel, 800 m; Sonora: Santa Magdalena: Durango: Tamazula; La Bajada 300 m; Sinaloa: El Norote, 10 m: Ymala.

334. **S. longispicata** Mart. et Gal. in Bull. Acad. Brux. 11, II. 73, 1844 per specimen in Mexico prov. Michoacan prope Ario apud Patzcuaro a Galeotti (no. 706) lectum constituta est; typum in herb. Mus. Brux., isotypum in herb. Kew. vidi. — *S. jaliscana* Briq. in Ann. Conserv. et Jard. bot. Genève 2. 153, 1898 per specimen in Mexico prov. Jalisco ad ripas prope Guadalajara a Pringle (no. 1798) lectum constituta est: typum in herb. Delessert., isotypos plures vidi. — *S. Molina* Fern. in Proc. Am. Acad. 40, 53, 1905 per specimen in Mexico prov. Michoacan prope Zamora ad ripas a Pringle (no. 8504) lectum constituta est; typum in herb. Gray., isotypos plures vidi.

Herba perennis altitudine ad 1,5 m caulibus superne villosulis; foliorum laminis plerumque 4—7 cm longis deltoideo-ovatis, in apice breviter abrupte acuminatis, in basi rotundatis vel subtruncatis et abrupte ad petiolos 2—4 cm longos cuneato-angustatis, marginibus convexioribus crenato-serratis pagina superiore hirtella, inferiore pubescente rarius subglabra; floribus 6—9 et ultra in verticillastris bracteis saepius ovato-acuminatis perstatis interdum deciduis subtentis, glomerulis plerumque inter se 0,5—2 cm distantibus in spicis strictis 15—30 cm

longis confertiusculis plus minusve interruptis rarius moniliformibus dispositis; calycibus florentibus extus villosulis 6—7 mm longis: corollarum tubo 6—7 mm longo, labia superiore 4—5.5 mm alta.

Mexico: Jalisco: Guadalajara, 1500—1600 m; Atemajac, 1500 m; Mexico: Temascaltepec, 1340 m; Michoacan: Morelia, 1800—1950 m; Zamora, 1600 m; Patzcuaro; Guerrero: Distr. Adama: Temisco in Barranco de la Tulia, 340 m.

335. **S. fluviatilis** Fern. in Proc. Am. Acad. **35**, 516, 1900 per specimen in Mexico prov. Morelos ad rivulos prope Cuernavaca a Pringle (no. 6850) lectum constituta est; typum in herb. Gray., isotypos plures vidi.

Herba perennis altitudine ad 2 m caulibus superne pubescentibus inter flores sparse hirtellis interdum glabris; foliorum laminis plerumque 6—12 cm longis rhomboideo-ovatis, in apice abrupte acuminatis, in basi rotundatis (infimis subtruncatis) et ad petiolos 1—3 cm longos cuneato-extenuatis, marginibus convexioribus crenato-serratis, pagina superiore pilis brevibus plus minusve ramosis sparse hirtella, inferiore vel pubescente vel fere glabra; floribus plerumque 6—9 in verticillastris bracteis ovato-acuminatis saepius deciduis subtentis glomerulis inter se circiter 1—1,5 cm distantibus in spicis interruptis strictis 10—30 cm longis dispositis; calycibus florentibus extus ad venas sparsissime hispidulis 4,5—5,5 mm longis; corollarum tubo 4.5—5 mm longo, labia superiore 4,5—4,5 mm alta.

Scarcely separable from *S. xalapensis.* Pringle 9161 and Fröderstrom and Hultén no. 192, both collected at Cuernavaca have simple hairs on the leaves.

Mexico: Morelos: ad rivulos Cuernavaca, 1600 m; San Antonio pr. Cuernavaca, 1700 m; Cuanta, 1300 m, ad rivulos; canyon del Lobo ad Cuernavaca, 1860 m; Guerrero: prope Taxco supra castellum La Mulata, 1500 m; Mina: Manchon; Michoacan; Hacienda Coahuayuto; Patzcuaro.

336. **S. xalapensis** Benth. in DC., Prodr. **12**, 308, 1848 per specimen in Mexico prov. Vera Cruz prope Jalapa a Schiede lectum constituta est; typum in herb. Kew., isotypum in herb. Univ. Calif. (Los Angeles) vidi. — *S. cordobensis* Briq. in Ann. Conserv. et Jard. bot. Genève **2**, 140, 1898 per specimen in Mexico prov. Vera Cruz prope Cordoba a Kerber (no. 1) lectum constituta est; typum in herb. Delessert., isotypum in herb. Univ. Goett. vidi.

Herba perennis altitudine ad 1 m caulibus superne villosis interdum inter flores pilis brevibus mollibus extensis sparse pilosis; foliorum laminis plerumque 5—10 cm longis rhomboideo-ovatis, in apice breviter acuminatis, in basi rotundatis et ad petiolos 0,5—2 cm longos abrupte cuneato-extenuatis, marginibus con-

vexioribus crenato-serratis, pagina superiore pilis simplicibus hirtella, inferiore pubescente interdum subtomentosa; floribus 6—12 et ultra in verticillastris bracteis rotundato-acuminatis tarde deciduis subtentis, glomerulis inter se plerumque 0,5—3 cm distantibus in spicis plus minusve interruptis strictis 15—30 cm longis frequenter moniliformibus dispositis; calycibus florentibus 4,5 ad 5 mm longis extus sparse villosulis in maturitate siccis saepe rubiginosis; corollarum tubo 4,5—5,5 mm longo, labia superiore 3.5—4,5 mm alta.

Mexico: Vera Cruz: Olmealca; Matzorongo; Jalapa; Cordoba; Orizaba; Teocelay; Zacuapan; Huatusco; Puebla: Metlaltoyuca; Hidalgo: Chapulhuacan, 1300 m.

Hiantes.

Herbae elatae vel frutices glabri foliis ovato-ellipticis in basi angustatis; bracteis deciduis; calycibus glabratis plus minusve pellucidis, labia superiore in maturitate plus minusve recurvis, inferioris laciniis acutis.

The Costa Rican species are clearly allied to four Andean species: *S. ocimifolia*, *S. perlucida*, *S. amplifrons* and *S. membranicalyx*.

337. **S. drymocharis** Epling sp. nov. per specimen in Costa Rica prov. San Jose in quercetis apud Quebradillas ad Santa Maria de Dota a Standley (no. 42964) lectum constituta est; typum in herb. Smithson., isotypum in herb. Mus. Field. vidi.

Suffrutex altitudine 1 m et ultra ramulis appresso-hirtellis; foliorum laminis tenuibus elliptico-ovatis 15—20 cm longis, supra medium gradatim acuminatis acutissimis infra medium ad petiolos 2—4 cm longos cuneato-extenuatis, paginis ambabus sparsissime hirtellis praesertim subtus ad venas caeterum glabris, marginibus serrulatis; floribus 6—12 et ultra in verticillastris approximatis in spicas 10—15 cm longas confertis; calycibus florentibus 7,5—8.5 mm longis extus ad venas hirtellis caeterum glabris labiis acutissimis tubum subaequantibus; corollarum albarum tubo 9,5—10 mm longo, labia superiore 4.5—5 mm alta.

Costa Rica: San Jose: in quercetis prope Quebradillas ad Santa Maria de Dota, 1800 m; Candelaria.

338. **S. Alvajaca** Oersted in Kjoeb. Vidensk. Meddel. 38, 1853 per specimen in Costa Rica inter Cartago et Candelaria a Oersted lectum constituta est; typum in herb. Mus. Haun., isotypum in herb. Kew. vidi. — *S. ourophylla* Briq. in Ann. Conserv. et Jard. bot Genève 2, 126, 1898 per specimen in Costa Rica ad Cancas Gordas a Pittier (no. 11169) lectum constituta est; typum in herb. Mus. Brux., isotypum in herb. Smithson. vidi. — *S. permixta* Briq.

in Ann. Conserv. et Jard. bot. Genève **2**, 129, 1898 per specimen in Costa Rica ad Rancho Flores (no. 2431) in pascuis et in monte Irazu (no. 4233) a Pittier (Tonduz) lecta constituta est; specimina in herb. Mus. Brux., Delessert. et Smithson. vidi.

Herbae verisimiliter perennes altitudine 60—120 cm erectae interdum procumbentes et in nodis radicantes ramulis hirtellis fere glabris; foliorum laminis ovatis 6—12 cm longis, in apice breviter acuminatis, in basi rotundatis et ad petiolos 2—8 cm longos plus minusve cuneato-angustatis vix tamen extenuatis, marginibus serrulatis fere glabris sparse hirtellis; floribus 3—6 in verticillastris approximatis in spicis 15—50 cm longis dispositis, glomerulis demum inter se 1—2 cm distantibus; calycibus florentibus glabris interdum ad venas hirtellis, 7—8 mm longis, in maturitate glaberrimis nitidis pedicellis 7—8 mm longis elatis; corollarum maximam partem albarum tubo 5—7 mm longo, labia superiore 2,5—3 mm alta.

Costa Rica: Laguna del Reventado, Irazu, 2800 m; in silva humida, Cerro de La Carpintera, Cartago, 1500—1850 m; Yerba Buena ad San Isidro, Heredia, 2000 m; inter Cartago et Candelaria; Cañoas Gordas, 1100 m; La Ventolera, Volcan Poas, 1700 m; in silva humida, La Palma, San Jose, 1600 m; El Roble, 3100 m; Viento Fresco, Alajuela, 1600—1900 m; Rio Birris, Irazu; El Muneco ad Navarro, Cartago, 1400 m. — Panama: El Boquete ad silvae marginem, 1000—1300 m. — (?) Ecuador: ad radices Chimborazo in silvis, 900—1000 m (Jameson).

339. **S. amplifrons** Briq. in Bull. Herb. Boissier. **4**, 863, 1896 per specim. in Bolivia prope Tunari a Kuntze lectum constituta est; typum in herb. Delessert., isotypum in herb. horti bot. Nov. Eborac. vidi.

Herba altitudine ad 1 m caulibus superne pilis brevibus extensis puberulis; foliorum laminis tenuibus, membranaceis, 8 ad 12 cm longis, 5—10 cm latis, ovatis, utrimque breviter acuminatis vel in basi cuneato-angustatis, margine crenato-serrata, pagina superiore hirtella, inferiore cinereo-pubescente, petiolis 3—6 cm longis elatis; floribus 3—6 in verticillastris bracteis 2—3 mm longis ovatis deciduis subtentis, inter se 1—2 cm distantibus, in spicis interruptis pubescentibus 10—15 cm longis dispositis; calycibus florentibus 7,5—8,5 mm longis, extus ad venas hispidulis in maturitate 9—10 mm longis, labiis hiantibus, superiore acuminata recurvo-erecta 3—4 mm alta, inferiore paulo longiore laciniis acuminatis acutissimis ad medium connatis, pedicellis 5—8 mm longis elatis; corollarum tubo 6—7,5 mm longo ventricoso sub labiam superiorem et subtus ad basim invaginato, labia superiore 3,5—4 mm alta, inferiore paulo longiore.

Bolivia: Santa Cruz: Samaipata, 1600 m; Larecaja; Tunari, 3000 m.

340. **S. membranicalyx** Epl. in Rep. Spec. Nov., Beiheft **85**, 71, 1935 per specim. in Ecuador prope Guayaquil a Tafalla lectum constituta est; typum (olim in herb. Lamb.) in herb. horti bot. Oxon. vidi. — *S. membranacea* var. *acuminata* Benth., Lab. Gen. et Sp. 259, 1833 et in DC., Prodr. **12**, 310, 1848 per specim. idem constituta est; typum olim in herb. Lamb., hodie in herb. horti bot. Oxon. vidi.

Herba annua altitudine 60—80 cm superne ramosa glabra: foliorum laminis tenuiter membranaceis 4—6 cm longis, 18—30 mm latis, acuminatis, in basi rotundato-angustatis, subcuneatis. margine serrato. paginis ambabus glabris, petiolis 2—4 cm longis; floribus tribus in verticillastris bracteis lanceolatis 2—3 mm longis deciduis subtentis, glomerulis inter se 5—10 mm distantibus in spicis interruptis 8—15 cm longis gracilibus dispositis; calycibus florentibus vix 5 mm longis extus glabris. in maturitate membranaceis, 8—10 mm longis. labia superiore rotundata recurvo-erecta mucronata, inferiore laciniis acuminatis paulo longioribus, pedicellis 3—5 mm longis gracilibus elatis; corollarum tubo subcylindrato 5—6 mm longo superne leniter ventricoso intus nudo, labia superiore 4 mm alta, inferiore 5 mm longa.

Ecuador: Guayaquil.

341. **S. perlucida** Epl. in Rep. Spec. Nov., Beiheft **85**, 72, 1935 per specim. in Peruviae prov. Ayacucho prope Ccarrapa inter Huanta et Rio Apurimac a Killip et Smith (no. 22350) lectum constituta est; typum in herb. Smithson., isotypos in herb. Univ. Calif. (Los Angeles) et Field. Mus. vidi.

Suffrutex viridis altitudine ad 2 m ramulis fere glabris; foliorum laminis membranaceis tenuibus 8—13 cm longis. 4—7 cm latis, elliptico-ovatis, in apice acuminatis. in basi ad petiolos 3—7 cm longos rotundato-extenuatis, margine serrato, pagina superiore sparse hirtella, inferiore glaberrima pallidiore: floribus sub anthesi pendulis 3—6 in verticillastris bracteis caducis lanceolatis 3—4 mm longis subtentis, glomerulis inter se 0,5—1,5 cm distantibus in spicis interruptis 10—20 cm longis dispositis, pedicellis 3—5 mm longis elatis: calycibus florentibus 7 mm longis extus fere glabris membranaceis, in maturitate 8—9 mm longis perlucidis, labia superiore rotundato-acuminata recurvo-erecta, inferiore laciniis acuminatis ad medium connatis 3 mm longis; corollarum albarum pallide roseo-tinctarum tubo 8 mm longo leniter ventricoso intus nudo. labia superiore 3 mm alta, inferiore 6 mm longa.

Peruvia: Ayacucho: prope Ccarrapa inter Huanta et Rio Apurimac in valle dense silvigera, 1500 m.

342. **S. ocimifolia** Epl. in Rep. Spec. Nov., Beiheft **85,** 69, 1935 per specim. in Ecuador in prov. Manabi in sitio El Recreo dicto, lat. ½⁰ Austr. lectum constituta est; typum in herb. Mus. Smithson., isotypum in herb. Mus. Par. vidi.

Herba ut videtur ramis fere glabris; foliorum laminis tenuibus 5—8 cm longis, 2,5—3,5 cm latis, ovatis vel oblongo-ovatis, in apice breviter acuminatis rarius obtusis, in basi rotundato-angustatis, petiolis 1—3 cm longis elatis, margine leniter crenato-serrata interdum subintegra, paginis ambabus glabris; floribus 3—6 in verticillastris bracteis membranaceis ovato-lanceolatis ciliatis 7—10 mm longis deciduis subtentis, glomerulis demum inter se 8—15 mm distantibus in spicis interruptis strictis angustis 15—25 cm longis puberulis dispositis; calycibus florentibus 11 mm longis, pedicellis 3—4 mm longis elatis, membranaceis perlucidis extus sparse hirtellis, in maturitate paulo auctis, labia superiore rotundato-mucronata, inferiore laciniis acuminatis 3—5 mm longis; corollarum purpurearum tubo 14 mm longo ventricoso intus nudo, labia superiore 4 mm alta, inferiore longiore 8 mm diametro.

Ecuador: prov. Manabi prope El Recreo, lat. ½⁰ Austr.

Scutellarioideae.

Herbae perennes humiles glabratae habitus *Scutellariae purpurascentis* et consanguinearum: bracteis parvis perstatis; calycibus glabratis.

343. **S. flaccida** Fern. in Proc. Am. Acad. **35**, 509, 1900 per specimen in Guatemala in silvis ad Rubeleruz a Tuerckheim (no. 780) et in Mexico prov. Chiapas inter Tumbala et El Salto a Nelson (no. 3374) lectum constituta est; specimen normale Tuerckheimii in herb. Gray. designo.

Herba parva flaccida habitu *Scutellariae purpurascentis* perennis rhizomatosa altitudine 15—40 cm, caulibus superne appresso-hirtellis et inter flores pilis glandulosis extensis viscidis; foliorum laminis 3—8 cm longis, ovato-ellipticis, in apice acutis, in basi ad petiolos graciles 0,5—2 cm longis cuneato-angustatis, marginibus serratis, paginis ambabus glaberrimis nisi ad venas subtus appresso-hirtellis; floribus tribus in verticillastris bracteis perstatis subtentis in racemis brevibus laxis 2—5 cm longis dispositis; calycibus florentibus tenuibus extus praesertim ad venas sparse glanduloso-hirtellis 11 mm longis, labiae superioris venis lateralibus incrassatis; corollarum tubo albo 14—17 mm longo, labia superiore 5—6 mm alta cyanea, inferiore 8—9 mm longa alba.

Guatemala: Alta Verapaz: in silvis, Rubeleruz 800 m; Finca Sepacuite; in silvis, Coban. — Mexico: Chiapas: inter Tumbala et El Salto, 500—1500 m.

58. Sect. **Ampelophyllae.**

Subsect. *Ampelophyllae* Epl. in Rep. Spec. Nov., Beiheft **85**, 76, 1935; species typica est *S. ampelophylla*.

Herbae crassae foliis amplis cordatis vel late rotundatis acuminatis mollibus; calycum labiis caudatis subaequilongis, superiore 3-venio, inferiore laciniis ad medium et ultra connatis; corollarum atrocaerulearum tubo ad basim subtus leniter invaginato ventricoso intus nudo. labia inferiore quam superior longiore; staminibus in labia superiore galeata inclusis; stylo piloso. Plantae boreali-andinae. *S. amethystina* est species typica.

Corollarum tubi 15—18 mm longi; folia rotundato-cordata in apice caudato-acuminata . . . . 344. *S. ampelophylla*
Corollarum tubi 17—21 mm longi; fölia ovato-cordata in apice acuminata . . 345. *S. amethystina*

344. **S. ampelophylla** Epl. in Rep. Spec. Nov., Beiheft **85**, 76, 1935 per specim. in Colombiae prov. El Cauca in Valle de Quintero prope Pitay a Pittier (no. 1426) lectum constituta est; typum in herb. Smithson., isotypos in herb. Gray. et horti bot. Nov. Eborac. vidi.

Suffrutex speciosus altitudine ad 3 m caulibus superne pilis extensis molliter incano-puberulis; foliorum laminis sat tenuibus 8—16 cm longis, 5—12 cm latis, rotundato-cordatis, in apice caudato-acuminatis, margine crenato-serrulata, pagina superiore griseo-viridi, hirtella, inferiore incano-tomentosa, ambabus mollissimis, petiolis 5—10 cm longis pubescentibus et facie superiore villosis elatis; floribus numerosis in verticillastris bracteis ovato-caudatis 6—10 mm longis caducis subtentis, glomerulis multifloris demum inter se 1—4 cm distantibus, in spicis interruptis speciosis magnis dispositis; calycibus florentibus 10—15 mm longis, extus pilis extensis et glandulosis pubescentibus in maturitate 15—18 mm longis, labia superiore 9—10 mm longa, acuminato-caudata, inferiore similiter ad medium et ultra connata in caudas 2—3 mm longas extenuata, pedicellis 1—2,5 cm longis elatis; corollarum caerulearum tubo 15—18 mm longo. ad basim invaginato, ventricoso, sub labiolo leniter invaginato. labia superiore 5—6 mm alta, inferiore 8—10 mm longa.

Colombia: El Cauca: prope Coconuco, 2600 m; in pratis prope San Andreas ad Coconuco, 2500—2800 m; in valle de Quintero supra Pitayo, in valle Rio Palo, 2700 m; in silvis in faciebus occidentalibus Paramo de Guanacas, 2500—2800 m.

345. **S. amethystina** J. E. Smith, Ic. Ined. **2**, 27, t. 27, 1790 per specim. in Colombiae verisimiliter prov. Cundinamarca

a Escallonio lectum constituta est; typum in herb. Linn. vidi. — *S. venusta* Kunth in Humboldt et Bonpland, Voy., Nov. Gen. et Sp. Pl. 2, 301, t. 153 (sub nomine „*mollis*") 1817 per specim. in Colombiae andibus Quindio inter Quebrada de Toche et La Seja a Humboldt et Bonpland lectum constituta est; specim. certum in herb. Mus. Par. vidi.

Herba perennis altitudine ad 1,5 m ramis pubescentibus et maximam partem pilis longioribus pilosis verisimiliter viscidis; foliorum laminis 5—12 cm longis, 4—7 cm latis, cordatis, in apice acuminatis, margine crenato-serrato, pagina superiore molliter hirsuta griseo-viridi, inferiore cinereo-villosa subtomentosa, petiolis 5—15 mm longis pubescentibus et saepius pilosis elatis; floribus circiter 6 in verticillastris bracteis ovatis caducis 5—12 mm longis pilosis caeruleis subtentis, glomerulis demum inter se 2 ad 5 cm distantibus in spicis interruptis speciosis pilosis dispositis; calycibus florentibus purpureis 12—14 mm longis extus plus minusve pubescentibus et praesertim ad venas pilosis, in maturitate 12—18 mm longis, labiis hiantibus, superiore 5—7 mm longa rotundata mucronata, inferiore laciniis paulo longioribus leniter acuminatis infra medium connatis, pedicellis 1—1,5 cm longis pilosis elatis; corollarum caerulearum tubo crasso ad basim invaginato ventricoso 17—21 mm longo, labia superiore 6—8 mm alta, inferiore 8—12 mm longa.

Colombia: Cundinamarca: Guadaloupe, 3000 m; in collibus Chapinero. Sabana de Bogota: El Dintel; Sibate, 2700—2800 m; ad Boqueron de Bogota, 2800 m; in silvis prope Chico, 9000 ad 9500 ped.; in viam ad Fusagasuga, 2700 m; inter Quebrada de Foche et La Seja; Santander: in declivitate occ. Paramo Rico, 3600 m.

59. Sect. Maxonia.

Herbae suffruticosae vel frutices foliis ovato-ellipticis utrimque angustatis petiolis sat brevibus elatis interdum subsessilibus; floribus plerumque 3—6 in verticillastris bracteis caducis subtentis in spicis interruptis interdum congestis dispositis; calycum labiis subaequilongis saepius acuminatis, superiore 5-venia, rarius sub-5-venia; corollarum caerulearum tubo 6—13 mm longo sat ventricoso ad basim frequenter subinvaginato, intus papillis 2—4 ornato, labia superiore 4—8 mm alta, inferiore subaequilonga; staminibus in galea inclusis, gubernaculo ad connexum in dentem parvum producto; stylo piloso, ramo postico longiore. Species typica est *S. Maxonii.* Plantae guatemalenses et austromexicanae.

A group for which it is difficult to prepare a key in the absence of sufficient material to demonstrate the range of variability;

further evidence may show the unity of *S. pteroura* and *S. Maxonii* on one hand and of *S. comayaguana*, *S. chiapensis* and *S. natalis* on the other.

Corollarum tubi 6 mm longi; petioli 1—3 mm longi . . . . 346. *S. festiva*
Corollarum tubi 8—12 mm longi; petioli 0,5—3,5 cm longi
 Folia glabrata; flores in spicis congestis dispositi
  Corollarum labia superior 10—11 mm alta; calyces florentes 9—10 mm longi . . 351. *S. Maxonii*
  Corollarum labia superior 5—10 mm alta; calyces florentes 5,5—8 mm longi . . 350. *S. pteroura*
 Folia subtus plus minusve pubescentia; flores in spicis interruptis dispositi
  Calyces florentes 5—6 mm longi
   Planta magnam partem glabra guatemalensis . . . . 349. *S. natalis*
   Planta magnam partem cinereo-pubescens mexicana . . . . 348. *S. umbraticola*
  Calyces florentes 7—10 mm longi
   Calycum labia inferior 3—3.5 mm longa; pili calycum parvi extensi . . . . 347a. *S. chiapensis*
   Calycum labia inferior 3,5—5 mm longa; pili 1 mm longi crassiores . . . . . 347. *S. comayaguana*

346. **S. festiva** Epling sp. nov. per specim. in Mexico prov. Chiapas prope pagum Comitan a Goldman (no. 896) lectum constituta est; typum in herb. Smithson. vidi.

Frutex ut videtur, ramulis minutissime puberulis; foliorum laminis ovatis plerumque 2—3 cm longis, in apice breviter acuminatis, in basi rotundatis, petiolis 1—3 mm longis elatis, marginibus subserratis, paginis ambabus glabris nisi ad venas minute hirtellis, inferiore pallida; floribus 6 in verticillastris in spicis 10—12 cm longis sat confertis dispositis, glomerulis demum inter se 0,5—1,5 cm distantibus; calycibus florentibus frequenter sub-5-veniis, 5 mm longis extus hirtellis; corollarum tubo 6 mm longo, intus papillis binis ornato, labia superiore 4 mm alta.

Mexico: Chiapas: Comitan.

347. **S. comayaguana** Standl. in Publ. Field Mus. Nat. Hist. Chicago, Bot. Ser. 8, 40. 1930 per specim. in Honduras in dumeto humido prope Siguatepeque a Standley (no. 55842) lectum constituta est; typum in herb. Mus. Field. vidi.

Frutex altitudine 1—2 m, ramulis praesertim inter flores villosis; foliorum laminis 7—15 cm longis, ovatis, in apice breviter

acuminatis, infra medium rotundatis et in basi ad petiolos villosos 1—3 cm longos cuneato-angustatis, marginibus serratis, pagina superiore hirtella, inferiore pubescente; floribus 6 in verticillastris bracteis deciduis subtentis in spicis interruptis 15—25 cm longis dispositis, glomerulis demum inter se 1—4 cm distantibus; calycibus florentibus 9—10 mm longis extus villosis; corollarum roseo-purpurearum tubo 11 mm longo, intus papillis quatuor ornato, labia superiore 6,5—7 mm alta.

Honduras: Comayagua: Siguatepeque.

347a. **S. chiapensis** Fern in Proc. Am. Acad. **35**, 544, 1900 per specim. in Mexico prov. Chiapas lecta constituta est; specim. a Nelson ad San Cristobal lectum (no. 3201) in herb. Gray. typum designo.

Frutex ut videtur ramulis superne pilis extensis villosulis; foliorum laminis ovatis interdum rhomboideo-ovatis, 5—12 cm longis, acutis, in basi ad petiolos 1—3,5 cm longos cuneato-angustatis, pagina superiore hirtella, inferiore cinereo-pubescente interdum velutina: floribus 3—6 in verticillastris bracteis caducis subtentis, in spicis interruptis 15—40 cm longis dispositis, glomerulis demum inter se 1—4 cm distantibus; calycibus florentibus 7—9 mm longis extus hispidulis; corollarum rubro-purpurearum tubo 10—11 mm longo, leniter ventricoso, intus ad basim papillis binis ornato, labia superiore 2,5 mm longa, inferiore paulo longiore subaequilonga; gynobasis cornu ovula superante.

Mexico: Chiapas: San Cristobal, 2200—2900 m.

348. **S. umbraticola** Epling sp. nov. per specim in Mexico prov. Puebla in Cerro de Paxtle prope San Luis Tultitlanapa a Purpus (no. 3080) lectum constituta est; typum in herb. Gray. vidi.

Suffrutex ut videtur ramulis minute puberulis cinereis, internodiis sat elongatis: foliorum laminis ovatis 6—9 cm longis, in apice acutis, in basi rotundatis petiolis 1—3,5 cm longis elatis, margine serrulato, pagina superiore fere glabra tamen ut videtur pallida, inferiore molliter incano-pubescente; floribus circiter 6 in verticillastris bracteis caducis subtentis in spicis interruptis sat confertis 15—20 cm longis saepius ternatis dispositis; calycibus florentibus 5—6,5 mm longis extus pubescentibus cinereis; corollarum tubo 8 mm longo, labia superiore 5,5 mm alta.

Mexico: Puebla: San Luis Tultitlanapa, Cerro de Paxtle in silvis umbrosis humidis.

349. **S. natalis** Epling sp. nov. per specim. in Guatemala inter San Martin et Todos Santos a Nelson (no. 3625) lectum constituta est; typum in herb. Smithson. vidi.

Suffrutex vel frutex ut videtur ramulis hirtellis fere glabris: foliorum laminis ovatis 5—10 cm longis, in apice breviter acuminatis, in basi rotundato-angustatis, petiolis pubescentibus 1—3 cm longis elatis, marginibus serrulatis, paginis ambabus fere glabris nisi inferiore vena media infra medium hirsuta; floribus 6 et ultra in verticillastris in spicis interruptis 15—30 cm longis sat congestis, glomerulis demum inter se 1—2 cm distantibus; calycibus florentibus extus praesertim ad venas hirtellis, 5 mm longis; corollarum tubo 10 mm longo, labia superiore 7 mm alta, inferiore subaequilonga.

Guatemala: inter San Martin et Todos Santos, 2200—2800 m.

350. **S. pteroura** Briq. in Ann. Conserv. et Jard. bot. Genève 2, 139, 1898 per specim. in Costa Rica in valle Digues ad Rio La Union a Pittier (no. 10637) lectum constituta est; typum in herb. Mus. Brux., isotypum in herb. Smithson. vidi.

Frutex ramis glabris; foliorum laminis ovato-ellipticis plerumque 8—12 cm longis, supra medium acuminatis, infra medium subrotundatis et ad petiolos 0,5—1,5 cm longos cuneato-extenuatis, marginibus serrulatis, paginis ambabus glabratis nisi inferiore ad venas hirsuta; floribus 3—6 in verticillastris crebris in spicas 4—8 cm longas confertis; calycibus florentibus extus interdum glabris appresso-hirtellis. 5,5—8 mm longis; corollarum pulchre cyanearum tubo 7—9,5 mm longo, labia superiore 5—9,5 mm alta.

There is a rather unusual range in flower size, even upon the same plant.

El Salvador: in humidis silvis, volcan San Vicente, 1200 ad 1500 m; Sierra de Apaneca ad Finca Colima, Ahuachapan. — Costa Rica: Rio La Union, in valle Digue. — Panama: Cerro Vaca, Chiriqui, in silvis et dumetis, 300—400 m.

351. **S. Maxonii** Epling sp. nov. per specim. in Guatemala prope Santa Maria a Maxon et Hay (no. 3569) lectum constituta est; typum in herb. Smithson. vidi.

Herba suffruticosa altitudine 1,5 m, ramulis superne appresso-hirtellis mox glabris; foliorum laminis elliptico-ovatis 5—12 cm longis, acuminatis, infra medium ad petiolos 3—8 cm longos angustatis plus minusve acuminatis, marginibus serrulatis, paginis ambabus fere glabris, inferiore ad venas breviter hirtella; floribus 3—6 in verticillastris bracteis caducis subtentis in spicas congestas breves axillares 3—10 cm longas confertis; calycibus florentibus 9—10 mm longis extus sparsissime hirtellis fere glabris purpureis. labia superiore 3-(sub-5-) venia; corollarum caerulearum tubo ventricoso 13 mm longo, intus ad basim papillis quatuor

ornato, labia superiore 10—11 mm alta, inferiore rotundata paulo breviore; stylo piloso; gynobasis cornu ovula superante.

The flowers were said to have been purple. The buds of the type, however, which have retained their color, are distinctly blue.

Guatemala: Quezaltenango: Santa Maria, 1500—1600 m.

60. Sect. **Insignifoliae.**

Herbae perennes glabratae foliis insignibus ellipticis acutissime remote serrulatis breviter petiolatis; floribus 1—3 in verticillastris bracteis atro-cyaneis caducis subtentis in spicis interruptis brevibus approximatis; calycum labia superiore 3-venia rotundata breviore; corollarum cyanearum tubo superne sat ventricoso intus nudo 15—17 mm longo, labia inferiore longiore lacinia media latiore; staminibus in galea inclusis, gubernaculo ad connexum in dentem parvum retrorsum producto; stylo ventraliter piloso, ramo postico longiore, gynobasis cornu ovula superante. Species una guatemalensis: *S. pansamalensis*.

It is possible that *S. Kellermanii* is allied here rather than in *S. Donnellsmithia*.

352. **S. pansamalensis** J. D. Smith in Bot. Gaz. 23, 249. 1897 per specimen in Guatemalae prov. Alta Verapaz prope Pansamala a Tuerckheim (no. 933) lectum constituta est; isotypum in herb. Smithson. vidi.

Herbae perennes fere glabrae 50—80 cm altae ramulis superne hispidulis; foliis insignibus ellipticis 10—20 cm longis, utrimque acuminatis, petiolis 5 mm longis elatis, paginis ambabus glabris, marginibus acutissime serrulatis; floribus 1—3 in verticillastris bracteis cyaneis speciosis caducis subtentis, in spicis interruptis 5—7 cm longis approximatis; calycibus florentibus ad venas hispidulis 10 mm longis; corollarum cyanearum tubo sat crasso 15 ad 17 mm longo. intus nudo, labia superiore 5,5—6 mm alta, labiae inferioris lacinia media 8 mm lata.

Guatemala: Alta Verapaz: Pansamala, 1200 m.

61. Sect. **Briquetia.**

Herbae crassae foliis amplis acuminatis in basi rotundato-angustatis interdum truncatis vel cordatis mollibus; calycum labiis subaequilongis acuminatis superiore 3-venis; corollarum atro-cyanearum tubo sat ventricoso ad basim invaginato (*S. ecuadorensis* integro), intus nudo, labia superiore quam inferior longiore; staminibus in galea inclusis, gubernaculo ad connexum in dentem parvum producto frequenter subintegro; stylo piloso, ramo postico longiore. Species typica est S. *mexicana*.

Folia utrimque glabra; calyces florentes 7 ad 10 mm longi
Herbae mexicanae; corollarum tubi 15 mm longi . . . . 353. *S. umbratilis*
Herba Indiae occ., corollarum tubi 12—12,5 mm longi . . . . 355. *S. lamiifolia*
Herbae ecuadorensis; corollarum tubi 15 mm longi . . . . 356. *S. ecuadorensis*
Folia rarius glabra; calyces florentes plerumque 10—15 mm longi, rarius 9 mm longi
Folia in basi cuneata vel truncata subtus saepius molliter hirtella, superiora petiolis 3—5 cm longis elata . . . . . 354. *S. mexicana*
Folia cordata utrimque glanduloso-villosula, superiora petiolis 8—15 cm longis elata . . . . 354 a. *S. atropaenulata*

353. **S. umbratilis** Fern. in Proc. Am. Acad. **45**, 421, 1910 per specim. in Mexico in Sierra Madre a Langlassé (no. 904) lectum constituta est; typum in herb. Gray.. isotypum in herb. Smithson. vidi.

Herba ut videtur altitudine ad 1 cm. ramulis gracilibus superne appresso-hirtellis; foliorum laminis late ovatis 5—8 cm longis. breviter acuminatis, in basi rotundatis vel cuneato-angustatis. petiolis 1—2 cm longis elatis, marginibus crenato-serratis, paginis ambabus glabris; floribus 6 in verticillastris in spicis interruptis gracilibus 20—25 cm longis dispositis, glomerulis demum inter se 1—2 cm distantibus; calycibus florentibus 9—10 mm longis, ad venas sparsissime hirtellis; corollarum cyanearum tubo 15 mm longo, labia superiore 9 mm alta, inferiore breviore.

Mexico: ? Guerrero: in Sierra Madre, 1200 m.

354. **S. mexicana** L., Sp. Pl. 25, 1753 per icon et descriptionem Dillenii constituta est; typum in herb. Dillenio in horto Elthamensi cultum vidi. — *Sclarea mexicana* Dill., Hort. Elth. 339. t. 254, f. 330, 1732 per specim. in horto Eltham. cultum constituta est; specim. Dillenianum vidi. — *Jungia altissima* Moench, Meth. 379, 1794 per *S. mexicanam* constituta est. — *Salvia papilionacea* Cav., Ic. 4, 9, t. 319, 1797 per specim. e seminibus mexicanis eductum constituta est; non typum sed icon vidi. — *S. nitidifolia* Ort., Hort. Matr., Dec. 53, 1797 per specim. seminibus in Mexico a Mociño et Sessé lectis eductum constituta est: typum non vidi. — *S. melissifolia* Desf., Cat. Hort. Par. ed. 3, 94, 1929 per specim. cultum constituta est; typum non reperire potui. — *S. mexicana* var. *major* Benth., Lab. Gen. et Sp. 297, 1833 et in DC.,

Prodr. 12, 337, 1848 per specim. praetermissum constituta est. — (?) *S. lupulina* Fern. in Proc. Am. Acad. 35. 542, 1900 per specim. in Mexico prov. Oaxaca in montibus ad San Juan del Estado a L. C. Smith (no. 167) lectum constituta est: typum in herb. Gray. vidi.

Herba crassa ramulis superne pilis brevibus retrorso-appressis inter flores extensis incanis; foliorum laminis rhomboideo-ovatis vel ovatis, plerumque 6—15 cm longis, in apice breviter acuminatis, in basi vel truncatis vel cuneatis, petiolis plerumque 3—5 cm longis (? et ultra) elatis, pagina superiore saepius atro-viridi frequenter subglabra, inferiore incano-pubescente interdum subtomentosa rarius glabrata, marginibus crenato-serratis; floribus 12 et ultra in verticillastris bracteis rotundatis 0,5—2 cm longis caducis subtentis, glomerulis inter se 1—3 cm distantibus in spicis speciosis strictis 30—50 cm longis dispositis; calycibus florentibus extus praesertim ad venas pilis curvis hirtellis interdum glabris, 12,5 ad 17 mm longis, in maturitate auctis saepe caeruleis; corollarum cyanearum tubo 18—25 mm longo, maximam partem 22—24 mm longo, labia superiore 10—19 mm alta, maximam partem 12—16 mm longa.

The hiatus between the two forms here recognized is of an order such as ordinarily to justify specific segregation. In this case, however, one cannot avoid the impression that he is dealing with a unit. Both forms are in themselves variable and present several variations. Apart from leaf-form and pubescence one of the two most significant of these is *S. lupulina*, described from Oaxaca by Fernald, and represented further by the collections of Liebman, of Camp and of Conzatti. In this the calyx lips are proportionately short and the lobes of the lower lip broader. Examples from Queretaro collected by Fr. Agniel are similar. The bracts are present in too few examples to draw any certain conclusions as suggested by Fernald. Those of Liebman's plant come within the range of the typical. The second significant variation is from Jalisco and Sinaloa collected by Mexia and by Dehesa in which the pubescence of the calyx is noticeably coarser. In the variety, a plant collected by Mexia at San Sebastian in Jalisco is also noteworthy, being thin-leaved, nearly glabrous and few-flowered. It is perhaps a shade form. Linnaeus' name was based upon Dillenius' plant which is the large flowered form and a well preserved specimen. *S. mexicana* in the Linnean herbarium is a sterile twig.

Mexico: Zacatecas: Plateado: Monte Escobedo; Hidalgo: Tequixquiac; Queretaro; Mexico: Rio Hondo; Desierto de los Leones; Dos Rios: Pedregal; San Angel; Mixcoac; Jalisco: Chapala;

Oaxaca: San Bernardino, 2000 m (Teotitlan); Combre de S. Juan del Estado; Tlalpancingo, 2000—2600 m; Sinaloa: El Carrigo. 800 m; Pico del Aguila, 1300 m, ad El Batel ad rivulum in querceto-pinetis; Santa Lucia, 1500 m.

var. **minor** Benth. in DC., Prodr. **12**, 337, 1848 per specim. in Mexico prov. Michoacan prope Toluca a Andrieux (no. 148) lectum constituta est; typum olim in herb. Hook. hodie in herb. Kew. et isotypum in herb. Gray. vidi.

Calycibus florentibus 9—14 mm longis, hirtis saepius extensis vestitis; corollarum interdum albarum tubo 11—18 mm, maximam partem 13—16 mm longo, labia superiore 4,5—10 mm, maximam partem 7—9 mm alta.

Mexico: Chihuahua: Batopilas, 1800 m; San Luis Potosi: Alvarez; in umbrosis prope Morales; Hidalgo: Regla, Banos del Grande; Puebla: Ixtaccihuatl, 2300—2600 m; Mexico: Toluca; San Angel; Churubusco; Amecameca, 2800 m; Tlalpam; El Abra; Eslava; Tizapan; Morelos: El Parque, 2500 m; Tres Marias; Cuernavaca; Michoacan: Cerro Azul prope Morelia, 2000 m; Rincon; Tlalpuhajua; Santa Maria, 1950 m; Patzcuaro; Mt. Tancitaro, 2600—3100 m; Aristeo ad Uruapan in saxosis; Jalisco: San Sebastian, Arroyo del Triangulo, 1425 m.

354a. **S. atropaenulata** Epl. sp. nov. per specim. in Mexico prov. Guerrero in regione Mina in Sierra Madre del Sur ad Petlacala in umbrosis ad rivulum a Mexia (no. 9056) lectum constituta est: typum in herb. Univ. Calif. (Los Angeles) vidi.

Herba foetida diffusa verisimiliter suffruticosa altitudine ad 1 m et ultra, ramulis pilis minutis extensis glandulosis dense obsitis et longioribus conspersis; foliorum laminis rotundato-cordatis 10—15 cm longis membranaceis viridibus abrupte acuminatis serrulatis utrimque pilis glandulosis minutis et longioribus sparse vestitis, petiolis 8—15 cm longis elatis; floribus 3—6 in verticillastris bracteis ovato-attenuatis 1—1,5 cm longis caducis subtentis, glomerulis inter se 2—4 cm distantibus in spicis glandulosis laxis 20—25 cm longis dispositis; calycibus florentibus glandulis minutis et pilis longioribus conspersis 12 mm longis pellucidis in maturitate paulo auctis; corollarum atrocyanearum tubo 17 mm longo, labia superiore 8 mm alta.

Suggests section *Dusenostachys* in habit.

Mexico: Guerrero: Minas: Sierra Madre del Sur ad Petlacala in umbrosis ad rivuli margines, 1910 m.

355. **S. lamiifolia** Jacq., Hort. Schoenbr. 3, 37, t. 318, 1798 per specim. hort. e seminibus mexicanis dictis cultum constituta est; typum reperire non potui. — *S. Boosiana* Jacq., Ecl. 1, 69,

t. 47 per spec. hort. in hort. Schoenbr. cultum constituta est; specim. verum in herb. Vindob. vidi. — *S. Boosii* Tratt., Arch. Gewächsk. 1, 58, t. 92, 1812 per specim. in hort. Schoenbr. e seminibus Boosianis cultum constituta est; specim. verum in herb. Vindob. vidi. — *S. hyemalis* Boose ex A. Dietr., Sp. Pl. 1, 276, 1839 per specim. hort. e seminibus Boosianis cultum constituta est. — *S. cyanea* Fisch., Cat. Hort. Gorenk. 21, 1812 (nomen). — *S. thymifolia* Willd., Enum. Hort. Berol., Suppl. 2, 1813 per hortatum constituta est; typum non vidi. — *S. amoena* Sims in Bot. Mag. t. 1294 per specim. in hort. Loddiges. cultum constituta est; typum non vidi. — *S. violacea* Don, Hort. Cambr. ed. 2, 5; et ex A. Dietr., Sp. Pl. 1, 276, 1839. — *S. latifolia* A. Anders. in Trans. Soc. Arts and Manuf. **25**, 210, 1807. — *S. Wilsonii* Urb. in Notizbl. Bot. Gart. Berlin VIII, 22, 1921 per specim. in horti Bath culto hodie in herb. Mus. Berol. constituta est; typum vidi.

Herba perennis suffruticosa altitudine ad 2 m caulibus superne sparse hirtellis; foliorum laminis tenuibus 8—20 cm longis, 5—12 cm latis, ovatis, acuminatis et subcordatis, in basi pulchre rotundatis, margine serrato, paginis ambabus glabris, inferiore pallidiore, petiolis 2—5 cm longis elatis; floribus 3—6 in verticillastris bracteis ovato-acuminatis 8—10 mm longis deciduis subtentis, glomerulis inter se 1—1,5 cm distantibus in spicis interruptis paniculatis approximatis; calycibus florentibus 7—8 mm longis extus sparse appresso-hirtellis, pedicellis 3 mm longis elatis; corollarum caerulearum tubo 12 mm longo, labia superiore 6 mm alta.

St. Vincents: in silvis, 400—500 m, Lodge R. — Sta. Lucia (?). — Jamaica (cult.). — (?) Trinidad (Sieber 189).

356. **S. ecuadorensis** Briq. in Ann. Conserv. et Jard. Bot. Genève **2**, 162, 1898 per specim. in Ecuador in sylvis prope Pallatunga a Spruce (no. 5543) lectum constituta est; typum in herb. Delessert., isotypos in herb. Kew., Gray., Mus. Brit., Par. et Univ. Goetting. et Calif. (Los Angeles) vidi.

Suffrutex altitudine ad 2 m valde ramosus, ramis glabris; foliorum laminis 5—10 cm longis, 3,5—7 cm latis, late ovatis etiam rotundato-ovatis, breviter acuminatis, in basi rotundatis, petiolis 2—10 cm longis elatis, margine serrato, paginis ambabus glaberrimis, inferiore saepe purpurea; floribus 3—6 in verticillastris bracteis glabris ovato-caudatis 5—8 mm longis caducis subtentis, glomerulis demum inter se 1—2 cm distantibus in spicis interruptis 20—30 cm longis dispositis; calycibus florentibus extus glabris, intus hispidulis, 1 cm longis, in maturitate 12 mm longis, labia superiore truncato-rotundata etiam retusa breviter caudata, inferiore laciniis caudatis, 5 mm longis, sub cauda

connatis, pedicellis 3—4 mm longis elatis; corollarum violacearum tubo 15 mm longo ventricoso intus nudo, labia superiore 10 mm alta, inferiore paulo breviore.

Ecuador: in silvis prope Pallatunga.

62. Sect. **Umbratiles.**

Subsect. *Umbratiles* Epl. in Rep. Spec. Nov., Beiheft **85**, 91, 1935. — Species typica est *S. obumbrata*.

Herbae perennes vel frutices foliis amplis glabratis ovatis: floribus 3—6 in verticillastris bracteis caducis subtentis in spicis interruptis dispositis; calycum labia superiore 5—7-venia rotundato-mucronata; corollarum coccinearum tubo intus ad basim papillis binis ornato. labia inferiore quam superior longiore patente; staminibus in labia superiore galeata inclusis; stylo glabro.

Plantae peruvianae.

Plantae glabratae; folia in apice obtusa . . 357. *S. obumbrata*

Plantae purpureo-villosae; folia supra medium gradatim acuminata . . . . 358. *S. silvarum*

357. **S. obumbrata** Epl. nom. nov. — *S. umbratica* Epl. in Rep. Spec. Nov., Beiheft **85**, 91, 1935 per specim. in Peruviae prov. Junin in valle fluminis Paucartambo ad pontem Purene in silvis umbrosis a Killip et Smith (no. 25311) lectum constituta est; typum in herb. Smithson., isotypum in herb. Univ. Calif. (Los Angeles) vidi (non Hance in Journ. Bot. 8, 75, 1870).

Herba altitudine ad 1 m caulibus pubescentibus; foliorum laminis anguste ovatis 8—10 cm longis, 4—6 cm latis. in apice obtusiusculis, in basi rotundato-angustatis. petiolis 3—5 cm longis elatis. paginis ambabus viridibus fere glabris sparse hirtellis, inferiore pallidiore. margine leniter crenato-serrato; floribus 6 in verticillastris bracteis non visis caducis subtentis, glomerulis demum inter se 1—3 cm distantibus in spicis interruptis 15 ad 20 cm longis pubescentibus dispositis, pedicellis 3—4 mm longis elatis; calycibus florentibus 12 mm longis extus hispidulis, in maturitate non visis; corollarum tubo sat ventricoso 18—19 mm longo intus ad basim papillis binis ornato, labia superiore 8 mm alta, inferiore 15 mm diametro.

Peruvia: Junin in valle fluminis Paucartambo ad pontem Purene in silvis umbrosis humidis, 700 m; ? ad Tarapoto (Spruce 4330; corollae desunt).

358. **S. silvarum** Epl. in Rep. Spec. Nov., Beiheft **85**, 91, 1935 per specim. in Peruviae prov. Junin ad viam Pichis inter Yapas et Enenas a Killip et Smith (no. 25612) lectum constituta est; typum in herb. Smithson., isotypum in herb. Univ. Calif. (Los Angeles) vidi.

Frutex altitudine 3 m et ultra ramulis pubescentibus; foliorum laminis supremis 6—8 cm longis, 3—4 cm latis. ovatis. supra medium gradatim acuminatis, in basi rotundato-angustatis, petiolis 1,5—2,5 cm longis elatis, margine serrulato, paginis ambabus viridibus sparse pubescentibus; floribus 3—6 in verticillastris bracteis lanceolatis purpureo-villosis 10—12 mm longis caducis subtentis, glomerulis demum inter se 1—2.5 cm distantibus in spicis interruptis purpureo-villosis 15—25 cm longis dispositis. pedicellis 5—8 mm longis villosis elatis; calycibus florentibus 14—15 mm longis. extus purpureo-villosis, in maturitate paulo auctis, labia superiore rotundata mucronata, inferiore laciniis acutis 4—5 mm longa: corollarum tubo 22 mm longo sat ventricoso, intus ad basin papillis binis ornato, labia superiore 7 mm alta, inferiore (?) subaequilonga.

Peruvia: Junin: ad viam Pichis inter Yapas et Enenas 1600 m, in silvis umbrosis humidis.

63. Sect. Fulgentes.

Herbae pulchellae perennes ut videtur frequenter suffruticosae; foliorum laminis plerumque deltoideo-ovatis petiolatis: floribus 2—12 in verticillastris rarius solitariis, bracteis caducis ovato-acuminatis frequenter in apice hamatis, in spicis interruptis glandulosis instructis; calycum labia superiore inferiorem saepius paulo superante 7-venia; corollarum coccinearum tubo 13—28 mm longo ventricoso, subtus ad basim invaginato et intus papillis binis ornato; staminibus in galea inclusis ad fauces positis, fere rectis. ad medium connexis. infra connexum dente retrorso ornatis; stylo dorsaliter (utrimque *S. dichlamydis* et *S. lineatae*) hirsuto: gynobasis cornu quam ovula saepius longiore. Species typica est *S. fulgens*. Plantae mexicanae rarius arizonicae.

Folia suprema sessilia plerumque 6—10 cm longa . . . . 359. *S. pulchella*

Folia omnia petiolata plerumque 2—6 cm longa

Corollarum labia superior 12—14 mm alta, tubus 25—28 mm longus . . . . . . 360. *S. fulgens*

Corollarum labia superior 6—12 mm alta. tubus 13—20 mm longus

Folia glabra (vide etiam *S. microphyllam* var. *Wislizeni*)

Folia deltoideo-ovata; bracteae 6 ad 10 mm longae . . . . 361. *S. lineata*

Folia oblongo-ovata; bracteae 3—5 mm longae . . . . 361a. *S. modica*

Folia plus minusve hirtella
Herbae perennes altitudine 20—50 cm, caulibus paucis e caudice lignoso ascendentibus foliis bullato-corrugatis subtus pilis minutissimis dense cinereis et longioribus ad venas sparse conspersis . . . . 362. *S. dichlamys*
Herbae perennes vel suffrutices altitudine saepius 0,5—3 m caulibus strictioribus foliis vix corrugatis subtus pilis extensis brevibus pubescentibus etiam incanis rarius glabris . . . . 363. *S. microphylla*

359. **S. pulchella** DC., Cat. Hort. Monsp. 142, 1813 per specim. in horto Monspel. cultum constituta est; non typum sed specimen verum in herb. Benthamiano vidi. — *S. ancistrocarpha* Fern. in Proc. Am. Acad. 40, 55, 1905 per specim. in Mexico prov. Mexico in angustiis Tultenango dictis a Pringle (no. 8674) lectum constituta est; typum in herb. Gray., isotypos complures vidi.

Herba perennis ut videtur suffrutex ramis pilis brevibus glandulosis et longioribus vestitis; foliorum laminis plerumque deltoideo-ovatis, 7—10 cm longis, in apice acutiusculis etiam longe acuminatis, in basi cordatis; marginibus rectis vel concavis, crenato-serratis, paginis ambabus pilis extensis hirtellis, petiolis 1—3 cm longis elatis, supremis sessilibus; floribus 6—12 in verticillastris spicas glandulosas speciosas subcongestas 10—30 cm longas formantibus dispositis, bracteis ovato-acuminatis caducis, 4—7 mm longis, in apice recurvis hamatis subtentis; calycibus florentibus 10—12 mm longis, extus pilis brevibus glandulosis et longioribus irrasis, labiis acuminatis; corollarum tubo 17—20 mm longo, labia superiore 7—9 mm alta, inferiore circiter 10 mm longa.

Mexico: Michoacan: Punguato pr. Morelia, 2100 m; Mexico: Tultenango canyon.

360. **S. fulgens** Cav., Icones 1, 15, t. 23, 1791 per specim. e seminibus mexicanis eductum constituta est; non typum sed specimina vera in herb. Juss. et Vent. vidi. — (?) *S. Schaffneri* Fern. in Proc. Am. Acad. 35, 535, 1900 per specim. in Mexico prov. San Luis Potosi in montibus prope Morales a Schaffner (no. 667: 334) lectum constituta est; typum in herb. Gray., isotypos in herb. Univ. Goett. et horti bot. nov. Eborac. vidi. — *S. incana* Mart. et Gal. in Bull. Acad. Brux. 11, II, 68, 1844 per specim. in Mexico prov. Puebla prope Tehuacan a Galeotti (no. 643) lectum constituta est; typum in herb. Mus. Brux. vidi. — (?) *S. orizabensis* Fern. in Proc. Am. Acad. 35, 538, 1900 per specim. in monte Orizaba a Botteri (no. 1168) lectum constituta

est; typum in herb. Gray. vidi. — (?) *S. grandiflora* Sessé et Moc., Pl. Nov. Hisp. ed. 2, 7, 1893 et Fl. Mex. ed. 2. IX. 1894; specimen ex herb. horti Matrit. vidi.

Herba perennis bella ut videtur suffrutex, ramis pilis saepius extensis interdum recurvis et brevioribus glandulosis hirtellis; foliorum laminis deltoideo-ovatis 3—6 cm longis, in apice obtusis interdum rotundatis rarius acutis in basi leniter cordatis, marginibus rectis vel concavis, crenatis, paginis ambabus hirtellis, inferiore saepius incana rarius glabrata et plus minusve glandulosa, petiolis 1—4 cm longis elatis; floribus 6—12 in verticillastris bracteis ovato-acuminatis recurvis caducis 5—6 mm longis subtentis in spicis interruptis glandulosis sat laxis 10—25 cm longis dispositis; calycibus florentibus 13—17 mm longis extus pilis brevibus glandulosis et longioribus irrasis interdum fere glabris, in maturitate 15—20 mm longis, 12—13 mm latis, labiis acuminatis, pedicellis 5—6 mm longis elatis; corollarum tubo 25—28 mm longo, labia superiore 13—15 mm alta, inferiore paule longiore.

S. fulgens exhibits a considerable diversity in degree of pubescence. The type, as well as the type of *S. incana*, which is quite similar, are ashy with rather short hairs similar to the collection of Bro. Nicholas at Teocalli de Cholula, Puebla. However, Pringle's specimens from Tehuacan (the type locality of *S. incana*) are much less pubescent and are scarcely to be distinguished from Conzatti's specimen from Santa Catarina which, I presume, is from San Luis Potosi. Schaffner's specimens are more glandular, but otherwise scarcely differ. Lundell's specimen from Charcas, while similar in flowers to the southern forms is markedly glandular with short-deltoid leaves. The leaves of the plants from San Luis Potosi are acute. In spite of such differences the evidence at hand suggests the unity of these forms. Botteri's specimen is similar to Schaffner's.

Mexico: Puebla: Achapulco; Teocalli de Cholula; Tehuacan; San Luis Tultitlanapa.

361. **S. lineata** Benth., Lab. Gen. et Sp. Suppl. 724, 1835 et in DC., Prodr. 12, 334, 1848 per specim. in Mexico a Karwinski lectum constituta est; typum in herb. Mus. Vindob. vidi. — *S. hamata* Brandegee in Zoë 5, 255, 1808 per specim. in Mexico prov. Puebla in collibus Cerros de Coatepe dictis prope Sanctae Luciae vicum a Purpus (no. 2579) lectum constituta est; typum in herb. Univ. Calif. (Berkeley), isotypos plures vidi.

Herba perennis altitudine 30—60 cm, caulibus gracilibus pluribus e caudice lignoso ascendentibus vix ramosis pilis brevibus recurvis hirtellis fere glabris superne glandulosis;

foliorum laminis 2—4 cm longis, deltoideo-ovatis, in apice obtusis, in basi rotundato-truncatis, marginibus convexiusculis crenato-serratis, paginis ambabus glabris, petiolis 1,5—3 cm longis elatis; floribus in verticillastris, bracteis 6—10 mm longis ovato-acuminatis in apice hamatis subtentis, in spicis interruptis sat laxis 10—20 cm longis longe pedunculatis dispositis; calycibus florentibus 9—10 mm longis, extus pilis brevibus plus minusve glandulosis irrasis; corollarum tubo 20 mm longo, labia superiore 6—7 mm alta, inferiore 8—10 mm longa.

Mexico: Puebla: Cerros de Coatepe prope Santa Lucia; Cerro de la Yerba; San Luis Tultitlanapa; Oaxaca: Cerro Verde.

361a. S. **modica** Epling sp. nov. per specim. in Mexico prov. Durango ad Guanacevi a Collins (no. 23) lectum constituta est: typum in herb. Smithson. vidi.

Herba perennis altitudine 30—40 cm, caulibus gracilibus paucis e caudice lignoso ascendentibus vix ramosis pilis brevibus recurvis hirtellis fere glabris superne paulo glandulosis: foliorum laminis 2,5—5 cm longis, oblongo-ovatis, in apice obtusiusculis in basi cuneato-angustatis, marginibus convexiusculis crenato-serratis, paginis ambabus glabris, petiolis 0,5—2 cm longis elatis: floribus 1—3 in verticillastris bracteis 2—3 mm longis caducissimis subtentis, in spicis interruptis sat laxis 8—10 cm longis (et ultra?) dispositis; calycibus florentibus 8—10 mm longis extus pilis brevibus plus minusve glandulosis irrasis; corollarum tubo 16 mm longo, labia superiore 7 mm alta, inferiore 11—12 mm longa; stylo utrimque piloso.

Mexico: Durango: Guanacevi.

362. S. **dichlamys** Epling sp. nov. per specim. in Mexico prov. Mexico in regione Temascaltepec prope Rincon a Hinton (no. 914) lectum constituta est; typum in herb. Kew., isotypum in Herb. Univ. Calif. (Los Angeles) vidi.

Herba perennis altitudine 20—50 cm, caulibus ascendentibus laxe ramosis pilis extensis glandulosis sparse vestitis; foliorum laminis siccis induratis ovatis vel oblongis, 1,5—4 cm longis, in apice obtusis, in basi rotundatis vel subcuneatis, petiolis 2—6 mm longis elatis, marginibus crenato-serratis, pagina superiore hirtella fere glabra bullato-rugosa, inferiore pilis minutissimis plus minusve glandulosis dense vestita incana et saepius ad venas pilis longioribus setaceis sparse conspersa: floribus plerumque oppositis bracteis caducis subtentis in racemis laxis 5—20 cm longis dispositis; calycibus florentibus extus pilis glandulosis setaceis sparse conspersis 8—10 mm longis, labia superiore 7-venia; corollarum rubrarum tubo 13—17 mm longo intus

ad basim invaginato et papillis binis ornato, labia superiore 6 ad 9 mm alta, inferiore duplo longiore patente; stylo utrimque piloso.

Mexico: Temascaltepec, Rincon, 1960 m, Michoacan: Morelia: San Miguel, 2100 m; Cerro Azul, 2200 m: Guerrero: Mina: Zihuaqueo-Filo Mayor, 1700 m; Aguazarca, in pinetis.

363. **S. microphylla** Kunth in Humboldt et Bonpland, Voy., Nov. Gen. et Sp. 2, 294, 1817 per specim. in Mexico prope Santa Rosa, Moran et Pachuco a Bonpland lectum constituta est; typum in herb. Mus. Berolin. vidi. — *S. Grahami* Benth. in Bot. Reg. t. 1370, 1830 per specim. in Mexico prope Tlalpujahua a Graham lectum constituta est; typum in herb. Kew. vidi. — *S. obtusa* M. et G. in Bull. Acad. Brux. 11, 2, 72, 1844 per specim. in Mexico prov. Oaxaca in Sierra Yavesia a Galeotti (no. 715) lectum constituta est; typum in herb. Mus. Brux. vidi. — *S. gasteracantha* Briq. in Bull. Herb. Boiss. 4, 858, 1896 per specim. in Uruguay a Kuntze lectum constituta est; typum in herb. Delessert. vidi. — *S. odoratissima* Sessé et Moc., Fl. Mex. ed. 2, 6, 1894; specimina ex herb. horti Matrit. vidi.

Herba perennis vel suffrutex pulcher altitudine ad 2 m, caulibus pluribus rhizomatosis ramosis, ramulis pilis brevibus extensis plus minusve glandulosis irrasis; foliorum laminis variis nunc deltoideo-ovatis nunc ellipticis, in apice saepius obtusis, etiam tamen acutis vel rarius acuminatis, in basi angustatis frequenter rotundato-truncatis rarius cordatis magnitudine variis, nunc 6 ad 10 mm longis nunc 1,5—2,5 cm longis, rarius 3—4 cm longis, plerumque 1,5—2 cm longis, margine serrato-crenulato interdum subintegro, paginis ambabus pilis brevibus pubescentibus, interdum inferiore subincana rarius fere glabra, petiolis maximam partem 5—10 mm longis; floribus saepius oppositis in racemis saepius 10—15 cm longis, pilis extensis brevibus plus minusve glandulosis irrasis, bracteis ovato-acuminatis 3—6 mm longis caducis subtentis; calycibus florentibus 10—15 mm longis, extus irrasis, in maturitate paulo auctis latioribus; corollarum rosearum tubo 16—18 mm longis, rarius 20 mm, labia superiore 6—12 mm longa, inferiore longiore patente; staminum connectivo 10—15 mm longo ad medium connexo.

S. microphylla embraces a variety of forms which are not readily definable. It is apparently a species in process of fragmentation in which three geographical races are emerging, distinguishable chiefly by the habit of foliage. In general, it may be said that the plants of Central Mexico are fairly uniform, their leaves being mostly 1—2 cm long and tending toward elliptical, being obtuse at the apex and more or less rounded at the base. Such small leaved forms are especially typical of Puebla, Hidalgo

and Mexico. Deltoid-ovate forms do occur however. *S. microphylla*, *S. Grahami* and *S. obtusa* are scarcely distinguishable. In San Luis Potosi may be found a variety of forms of which *S. neurepia* is the most striking. This form, with leaves mostly 2 cm long or more, tending to be deltoid and truncate or even subcordate at the base, runs up the Eastern Cordillera into Tamaulipas, Nuevo Leon and Coahuila. Some forms of Zacatecas approximate it. In Zacatecas and Durango, while still most like the forms of Central Mexico, the plants there exhibit a tendency toward a more acute and larger leaf, round at the base or truncate. Such a form with a larger and more acute leaf is fairly stable in Chihuahua, Sonora and Arizona, where it is known as *S. Lemmoni*. There is perhaps a tendency for the deltoid forms to be more pubescent, even canescent, but the pubescence throughout differs only in degree. While the petioles vary in length as much as the leaves, their relative length is much the same. The flowers and inflorescence are fairly uniform throughout.

Mexico: Mexico: Sierra de las Cruces; Tultenango; Ajusco; Amecameca; Tlalpuhajua; Temascaltepec, Cajones, 2480 m; Temascaltepec, Meson Viejo, 2830 m; Toluca; Vera Cruz: Orizaba, 3000 m; Puebla: Tehuacan, 2000 m; Ixtaccihuatl; Esperanza; Acatzinco; Chalchicomula; Cholula; Huejotzingo: Hidalgo; Pachuca; inter Somoriel et Las Lojas; Michoacan: Morelia, Quinceo; Oaxaca: Sierra de San Felipe.

var. **neurepia** Epling comb. nov. per *S. neurepiam* Fern., l. c., constituta est. — *S. neurepia* Fern. in Proc. Am. Acad. 35, 535, 1900 per specim. in Mexico prov. San Luis Potosi in silvis apud Morales a Schaffner (no. 661) lectum constituta est; typum in herb. Gray., isotypum in herb. Univ. Goett. vidi.

Foliis plerumque deltoideo-ovatis in apice obtusis in basi truncato-subcordatis rarius rotundatis maximam partem 2—4 cm longis.

Mexico: Mexico: Guadaloupe; Ajusco; Zacatecas: Zacatecas; San Luis Potosi: in silvis, Sierra de Alvarez, 2300—2400 m; Guanajuato: Guanajuato; Tamaulipas: Sierra de San Carlos, Cerro Carrizo ad San Jose, 1600 m; Nuevo Leon: in montibus pr. Monterey; in angustiis San Fransisco versus Pueblo Galeana, 2500—2600 m; Alamor pr. Pueblo Galeana, 1500—1600 m; Coahuila: Saltillo.

var. **Wislizeni** Gray in Proc. Am. Acad. 21, 408, 1886 per specim. in Mexico prov. Chihuahua in collibus prope Cusihuiriachic a Wislizeno (no. 152) lectum constituta est; typum in herb. Gray., isotypum in herb. horti bot. Missour. vidi. — var. *canescens* Gray in Proc. Am. Acad. 21, 407, 1886 per specim. in Mexico

prov. Chihuahua in collibus ad oppidum a Pringle (no. 637) lectum constituta est; typum in herb. Gray., isotypos complures vidi. — *S. Lemmoni* Gray in Proc. Am. Acad. 20, 309, 1885 per specim. in Arizona in montibus Huachuca a Lemmon lectum constituta est; typum in herb. Gray. vidi.

Foliis saepe acutioribus etiam acuminatis plerumque 1,5—3 cm longis saepius acuminatis; calycum dentibus paulo acutioribus caeterum vix differt.

Mexico: Zacatecas: Zacatecas; Plateado; (?) San Luis Potosi; Durango: ad oppidum; El Salto; Tejamen; Sonora: San Jose Mts., 2800 m; Chihuahua: Cosiquiriachi; Colonia Juarez; Chihuahua, in Sierra Madre Mts.; San Diego; Batopilas. — Arizona: Pima: Santa Rita Mts.; Cochise: Dos Cabezos Mts.; Chiricahua Mts.; Huachuca Mts.

64. Sect. **Pavonia.**

Subsect. *Pavonianae* Epl. in Rep. Spec. Nov., Beiheft 85, 95, 1935; species typica est *S. revoluta*.

Frutices pulchri pilis ramosis incani, foliis lineari-lanceolatis interdum lineari-oblongis vel oblongo-deltoideis subtus incanis; floribus tribus in verticillastris bracteis deciduis subtentis in spicis interruptis dispositis; calycum labia superiore 5—7-venia rotundata; corollarum rubro-purpurearum tubo ventricoso intus ad basim papillis binis ornato, labiis subaequilongis; staminibus in labia superiore galeata inclusis, jugo ad medium connexo, gubernaculo in dentem retrorsum acutum dilato: stylo piloso. Plantae peruvianae.

Folia 4—10 mm lata; corollarum tubi 13 ad
 14 mm longi . . . . 364. *S. revoluta*
Folia 12—25 mm lata; corollarum tubi 19 ad
 23 mm longi . . . . 365. *S. Macbridii*

364. **S. revoluta** R. et P., Fl. peruv. 1. 28, t. 41 (sub nomine *S. linearis*) 1798 per specim. in Peruviae prov. Lima in praeruptis Canta a Ruiz et Pavon lectum constituta est: specimina certa in herb. Boiss. et Berolin. vidi.

Frutex pulcher griseo-viridis altitudine ad 1 m ramis stramineis glabris, ramulis pilis ramosis floccoso-tomentosis; foliorum laminis coriaceis, petiolis 2—4 mm longis elatis, lineari-lanceolatis, interdum lineari-oblongis, 3—6 cm longis, 4—10 mm latis, acutiusculis, in basi rotundato-truncatis vel rotundato-angustatis, juvenilium margine saepius revoluta, crenulata, pagina superiore molliter puberula, inferiore albotomentella; floribus circiter tribus in verticillastris bracteis ovatis acuminatis 4—6 mm longis subtentis, glomerulis in spicas interruptas 5—12 cm longas approximatis; calycibus

florentibus 11—12 mm longis, extus pilis ramosis mollissime albo-tomentosis interdum purpureis, in maturitate magnitudine variis nunc vix auctis nunc 16—17 mm longis, labiis 5—6 mm longis breviter acuminatis, pedicellis 2—3 mm longis elatis; rubropurpurearum corollarum tubo 13—14 mm longo, intus ad basim vix invaginato sed papillis duabus ornato, ventricoso et sub labia inferiore invaginato, labia superiore 5.5 mm alta, inferiore 6 ad 6,5 mm longa.

Peruvia: in praeruptis Cantae; in praeruptis fruticosis prope Huariaca, 9500 ped.; Canamaquilla.

365. **S. Macbridii** Epling nom. nov. per specim. in Peruviae prope Yanahuanca a Macbride et Featherstone (no. 1190) lectum constituta est; typum in herb. Univ. Calif. (Los Angeles) et isotypum in herb. Mus. Field. vidi. — *S. acutifolia* R. et P., Fl. peruv. 1, 24, t. 38, 1798 per specim. in Peruviae prov. Lima prope Cheuchin a Dombey (no. 272) lectum constituta est; specim. certa in herb. Mus. Par., DC. et Berolin. vidi (non Lamarck. Illust. Gen. 1, 68, 1791).

Frutex incanus pulcher altitudine ad 1 m, ramis stramineis glabris, ramulis pilis ramosis floccoso-tomentosis; foliorum laminis coriaceis petiolis albo-floccosis 1—1,5 cm longis elatis, 3—7 cm longis, 12—25 mm latis, deltoideo-lanceolatis interdum oblongo-deltoideis, in basi truncato-subcordatis, margine rectiusculo crenulato, pagina superiore cinereo-viridi puberula, inferiore densissime albo-tomentella; floribus 3—6 in verticillastris bracteis 3—5 mm longis ovatis caducis subtentis, glomerulis in spicas interruptas 3—15 cm longas approximatis; calycibus florentibus 12—15 mm longis, extus pilis ramosis incano-tomentosis, floccosis, in maturitate paulo auctis, labiis 6 mm longis leniter acuminatis, superiore 5—7-venia, pedicellis 2—3 mm longis elatis; corollarum pulchre rubrarum tubo 19—23 mm longo, ad basim leniter constricto nullomodo invaginato, intus papillis binis ornato, infra leniter invaginato, labia superiore 7,5—8 mm alta, inferiore 8—10 mm longa.

Peruvia: Cheuchin; in declivitate dense fruticosa prope Yanahuanca, 10000 ped.

65. Sect. **Nobiles.**

Frutices alti, rarius herbae perennes, foliis sat amplis ovatis vel elliptico-lanceolatis nunc glabris nunc plus minusve villosis, petiolis in basi saepe articulatis et infra connexum leniter auriculatis; floribus saepius in spicis speciosis bracteis vel deciduis vel perstatis subtentis, interdum in foliorum supremorum axillis positis; calycum labia superiore 5—7-venia, nunc rotundata nunc

acuminata; corollarum coccinearum tubo tubiformi superne ampliato vix ventricoso, intus nudo, labia inferiore quam superior subaequilonga vel breviore, laciniis prorata brevibus; staminibus in labia superiore galeata inclusis, gubernaculo integro vel praesertim specierum mexicanarum infra connexum in dentem parvum deltoideum producto; stylo utrimque villoso (*S. rivularis* excepta) ramo postico saepius breviore. Plantae mexicano-brasilianae.

Plantae mexicanae
- Flores oppositi in foliorum supremorum axillis dispositi . . . . 368. *S. disjuncta*
- Flores vel in racemis vel in spicis dispositi
  - Corollarum tubi 16—18 mm longis; floribus 6—12 et ultra in glomerulis . . 367. *S. adenophora*
  - Corollarum tubi 28—40 mm longis; floribus 2—6 in glomerulis . . . . . . 366. *S. gesneraeflora*

Plantae brasilianae
- Calyces extus pilis singularibus incrassatis multiramosis scabro-floccosi . . . . . 372. *S. Hilarii*
- Calyces extus vel glabri vel pilis simplicibus molliter lanati
  - Calyces florentes 25—30 mm longi; flores bracteis lanceolatis 1,5—4 cm longis subtenti . . . . 376. *S. Sellowiana*
  - Calyces florentes 15—25 mm longi; flores bracteis ovato-acuminatis 5—12 mm longis subtenti vel in foliorum supremorum axillis dispositi
    - Flores in foliorum supremorum axillis solitarii
      - Calyces sat tenues sparse villosuli, labiis aequilongis . . . . 369. *S. balaustina*
      - Calyces sat firmi glabri labia superiore longiore . . . . 370. *S. articulata*
    - Flores in spicis interruptis dispositi
      - Folia ovata interdum rotundata utrimque glabra . . . . 371. *S. Benthamiana*
      - Folia saepius elliptico-lanceolata plus minusve villosa
        - Calyces extus densissime mollissime rubro-lanati . . . . 377. *S. macrocalyx*
        - Calyces extus nunc glabri nunc rubro-villosi
          - Calyces florentes 14—18 mm longi in maturitate 17—20 mm longi;

styli glabri; folia acute serrulata anguste ovata . . . . 373. *S. rivularis*

Calyces florentes 18—25 mm longi in maturitate 20—25 mm longi; styli pilosi; folia elliptico-lanceolata obscure serrulata

Calyces extus molliter villosi in maturitate saepe glabri . . . 375. *S. salicifolia*

Calyces extus pilis crassioribus 2—2,5 mm longis villosi . . 374. *S. persicifolia*

366. **S. gesneraeflora** Lindl. et Paxton, Flower Gard. 2, 49, 1851 per specim. hort. e seminibus verisimiliter mexicanis constituta est; icon. vidi. — ? *S. grandiflora* Sessé et Moc., Pl. Nov. Hisp. ed. 2, 7, 1893 et Fl. Mex. ed. 2, 9, 1894; specimina ex herb. horti Matrit. vidi.

Frutex altitudine ad 8 m ramulis pilis extensis glandulosis pubescentibus; foliorum laminis ovatis, 5—10 cm longis, saepius abrupte acuminatis in basi leniter cordatis vel rotundatis, petiolis 2—8 cm longis elatis, marginibus serrulatis. saepius convexioribus, pagina superiore hirtella. inferiore molliter pubescente; floribus saepius oppositis interdum 4—6 in verticillastris bracteis sat parvis caducis acuminatis, in racemis 10—20 cm longis dispositis; calycibus florentibus extus pilis crassiusculis sparse pubescentibus 16—21 mm longis, in maturitate vix auctis; corollarum tubo maximam partem 35—40 mm longis.

Mexico: Amecameca, 2400 m; El Abra; Temescaltepec: Los Hornos, Cumbre-Cruz in Alneto; San Nicolas; ad radices Sierra de Ajusco ad Eslava, 2600 m; Morelos: in monte Zempoala. Tres Marias, 3100 m; Puebla: Ixtaccihuatl, ad amnis ripas, 2300 ad 2600 m; Michoacan: in Cerro Azul prope Morelia, 2400 m: Zacatecas: Sierra de los Morones, Plateado; Jalisco: Real Alto. Arroyo de las Cruzes, 2500 m; Mascota; Sierra de Nayarit (Huichol); inter San Sebastian et Mt. Bufa de Mascota, 2300—2500 m.

367. **S. adenophora** Fern. in Proc. Am. Acad. 35, 538, 1900 per specim. in Mexico prov. Oaxaca inter Tlapancingo et Tlalixtaquilla a Nelson (no. 2093) lectum constituta est; typum in herb. Gray., isotypum in herb. Smithson. vidi. — *S. cyclophylla* Fern. l. c., 551, 1900 per specim. sub numero eodem Nelsonii constituta est; typum in herb. Gray. vidi.

Frutex ramulis pilis extensis glandulosis vestiti; foliorum laminis late ovatis 4—6 cm longis, abrupte acuminatis, in basi leniter cordatis, petiolis 1—3 cm longis elatis, marginibus serrulatis, pagina superiore hirtella, inferiore molliter pubescente etiam incana: floribus plerumque 3—6 in verticillastris bracteis parvis caducis

subtentis, glomerulis approximatis in spicis 10—30 cm longis plerumque paniculatis dispositis; calycibus florentibus 10—12 mm longis extus pilis glandulosis extensis viscidis, in maturitate patentim auctis praesertim latioribus; corollarum tubo sat ventricoso 16—18 mm longo.

The dried corollas of *S. adenophora* show usually some small corrugations at the nectary which seemingly disappear when the corolla is boiled. I hardly believe they represent papillae, at least in no wise conspiconus ones. *S. cyclophylla*, in my opinion. is an abnormal part of the same plant upon which *S. adenophora* was based. The flowers are the same, and the pubescence.

Mexico: Oaxaca: Tlapancingo, 1400—1600 m; El Parian, Etla, 1200—1400 m; Nochixtlan. 1000 m; Zoochila; Jayacatlan, 1300 m.

368. **S. disjuncta** Fern. in Proc. Am. Acad. 35, 533, 1900 per specim. in Mexico prov. Chiapas a Ghiesbreght (no. 753) lectum constituta est; typum in herb. Gray., isotypos in herb. Mus. Field. et horti bot. Missour. vidi.

Frutex altitudine ad 1,5 m ramulis gracilibus pilis crispulis interdum extensis sparse pubescentibus; foliorum laminis 3—5 cm longis, deltoideo-ovatis, in apice obtusiusculis vel acutis, in basi leniter cordatis, petiolis gracilibus 5—20 mm longis elatis marginibus saepius rectis, crenato-serratis, paginis ambabus sparse hirtellis, inferiore pallidiore interdum pubescente; floribus oppositis in foliorum supremorum axillis dispositis; calycibus florentibus 14—16 mm longis, extus praesertim ad venas hirtellis, fere glabris, in maturitate vix auctis, labiis acuminatis; corollarum tubo 24—28 mm longo.

Mexico: (?) Oaxaca: Cumbre de Ixtepex; Zacualtipan; Chiapas San Cristobal, 2300—2700 m. — Guatemala: Sunil; Huehuetenango: Sierra Cuchumatanes supra Chiantla, 3000 ad 3400 m.

369. **S. balaustina** Pohl, Pl. Brasil. Ic. 2, 133, t. 189, 1831 per specim. in Brasiliae prov. Rio Janeiro in dumetis et inter frutices ad margines viarum prope Engenho do Varge a Pohl (no. 5015) lectum constituta est; typum in herb. Mus. Vindob. vidi.

Frutex gracilis diffusus altitudine ad 3 m et ultra, ramulis gracilibus sparse villosulis foliorum laminis tenuibus maximam partem 3—6 cm longis 1—2 cm latis oblongo-ellipticis vel ovato-ellipticis interdum ovato-lanceolatis ad 12 cm longis, in apice acutis, in basi rotundato-angustatis, margine serrulato, pagina superiore vel hirtella vel sparse villosa, inferiore praesertim ad venas villosula, petiolis 3—10 mm longis elatis; floribus in foliorum axillis nunc tribus nunc solitariis interdum in

spicis interruptis villosulis laxis 15—20 cm longis dispositis; calycibus florentibus sat tenuibus saepe roseo-tinctis extus sparse villosulis 15—17 mm longis, labiis aequilongis ambabus similibus breviter abrupte acuminatis, in maturitate 18—19 mm longis, pedicellis 10—12 mm longis villosulis elatis; corollarum tubo 33—40 mm longo intus nudo superne gradatim ampliato, labia superiore 13—15 mm alta, inferiore paulo breviore lacinia media circiter 3 mm longa.

Brasilia: São Paulo: in silvis humidis prope São João, 800 m; Rio Janeiro: prope Encino varge ad vias in dumetis et inter frutices; in Serra dos Orgãos.

370. **S. articulata** Epl. in Rep. Spec. Nov., Beiheft 85, 113. 1936 per specim. in Brasiliae prov. Minas Geraes prope Capivary juxta Caldas in margine paludis silvae primaevae a Mosén (no. 1922) lectum constituta est; typum in Mus. Stockh. vidi.

Frutex pulcher altitudine ad 3 m foliosus ramosus, ramis glabris saepe purpureis; foliorum pulchrorum laminis sat coriaceis 6—15 cm longis 2—5,5 cm latis, maximam partem 6—8 cm longis 2,5—3,5 cm latis, elliptico-lanceolatis vel lanceolatis, acuminatis, in apice acutissimis, in basi ad petiolos 1—3 cm longos angustatis, petiolis articulatis et infra connexum auriculatis, margine serrato, paginis ambabus omnino glabris rarius puberulis floribus in foliorum axillis vel solitariis vel tribus; calycibus florentibus 18—25 mm longis extus glabris rarius sparsissime hispidulis venis induratis, labia superiore 5—9 mm longa, acuminata, inferioris laciniis acuminatis brevioribus, in maturitate paulo auctis pedicellis 4—8 mm longis elatis; corollarum tubo 28—45 mm longo superne gradatim ampliato intus nudo, labia superiore 13—16 mm alta, inferiore subaequilonga, lacinia media 4—5 mm longa.

Brasilia: Minas Geraes: prope Caldas ad Rio Verde; Ouro Fino; prope Caldas in ripa umbrosa amnis Rio Verdinha; Capivary juxta Caldas in margine paludis silvae primaevae; Mantiqueira; Antonio Pereira juxta Ouro Preto: Formoso; São Paulo: prope Santa Anna in silvulis paludosis.

371. **S. Benthamiana** Gardn., ex Fielding. Sert. Pl. t. 19, 1844 per specim. in Brasiliae prov. Rio Janeiro in Serra dos Orgãos in saxosis a Gardner (no. 580) lectum constituta est: typum in herb. Mus. Brit., isotypos in herb. Kew., Par., Vindob., Delessert., et Univ. Calif. (Los Angeles) vidi.

Frutex pulcher ramosus altitudine ad 1,5 m et ultra ramis glabris: foliorum laminis 2,5—5 cm longis, 15—30 mm latis, ovatis etiam subrotundis, in apice obtusioribus, in basi rotundatis, petiolis 2—4 mm longis elatis, margine acute serrato;

paginis ambabus glabris, inferiore pallidiore; floribus tribus in verticillastris bracteis glabris ovato-acuminatis 4—6 mm longis caducis subtentis, glomerulis approximatis in spicis interruptis 0.5—8 cm longis dispositis; calycibus florentibus extus glabris vel ad basim sparse hispidulis, 15 mm longis, in maturitate paulo auctis, labiis 5 mm longis, superiore rotundata mucronata, inferiore laciniis leniter acuminatis infra medium connatis, pedicellis 4—5 mm longis hispidulis elatis; corollarum tubo 20—25 mm longo superne gradatim ampliato intus nudo, labia superiore 16—18 mm alta, inferiore paulo breviore.

Brasilia: Rio Janeiro: in Campos das Antas, Serra dos Orgãos; Theresopolis.

372. **S. Hilarii** Benth., Lab. Gen. et Sp. 282, 1833 et in DC., Prodr. **12**, 328, 1848 per specim. in Brasilia a St. Hilaire (no. 1141) lectum constituta est: typum verum non reperire potui, isotypum in herb. Mus. Par. vidi.

Frutex ramis glabris; foliorum laminis 7—15 cm longis, 2—6 cm latis, vel lanceolatis vel ovato-lanceolatis, leniter et longe acuminatis, in basi rotundato-angustatis, petiolis 1.5—4 cm longis gracilibus puberulis elatis, margine acute serrato, paginis ambabus glabris vel minutissime puberulis; floribus 1—3 in verticillastris bracteis lanceolatis 1—2 cm longis deciduis subtentis, glomerulis inter se 0,5—1,5 cm distantibus, in spicas interruptas 5—10 cm longas confertis; calycibus florentibus 18—20 mm longis, extus densissime scabro-floccosis, pilis multiramosis rufis dense vestitis, in maturitate 20—22 mm longis, pedicellis tomentosis 6—10 mm longis elatis; corollarum tubo 30—34 mm longo, leniter ventricoso, intus nudo, labia superiore 10—13 mm alta, inferiore breviore.

Brasilia: São Paulo: São Paulo: Parana: Ypiranga.

373. **S. rivularis** Gardn. ex Field., Sert. Pl. t. 20, 1844 per specim. in Brasiliae prov. Rio Janeiro in montibus Orgãos ad rivulum in sylvis a Gardner (no. 577) lectum constituta est: typum in herb. Mus. Brit., isotypos in herb. Delessert. et Vindob. vidi.

Frutex altitudine ad 2 m ramis villosis; foliorum laminis 7—13 cm longis, 2—3,5 cm latis, anguste ovatis, in apice acuminatis, in basi nunc acuminatis nunc acutis, ad petiolum 1—2 cm longum villosulum rotundato-angustatis, margine acute serrato, pagina superiore hirtella, inferiore praesertim ad venas villosula; floribus tribus in verticillastris bracteis caducis non visis subtentis, glomerulis demum inter se 1—2 cm distantibus in spicis interruptis speciosis dispositis; calycibus florentibus praecipue ad basim hirtellis, 14—18 mm longis, in maturi-

tate 17—20 mm longis, labiis 5—6 mm longis acutis vel leniter acuminatis, inferiore saepius integra, pedicellis 6—8 mm longis elatis; corollarum tubo 37 mm longo gracili superne ventricoso intus nudo, labia superiore 12—13 mm alta, inferiore 6—7 mm longa.

Brasilia: Rio Janeiro: in cacumine Serra dos Orgãos.

374. **S. persicifolia** St. Hil. ex Benth., Lab. Gen. et Sp. 281, 1833 et in DC., Prodr. **12**, 329, 1848 per specim. in Brasiliae prov. Minas Geraes in silvis primitivis prope pagum Rio Vermelho a St. Hilaire (no. 1080) lectum constituta est; typum in herb. Mus. Par. vidi.

Frutex pulcher fragrans altitudine ad 2,5 m ramis rubro-villosulis; foliorum laminis 6—12 cm longis, 1,5—2,5 cm latis, elliptico-lanceolatis, utrimque acutis vel acuminatis, petiolis 3—8 mm longis elatis, margine serrulato, pagina superiore hirtella, inferiore nunc glabra nunc tomentella; floribus tribus in verticillastris bracteis subrotundis caudatis rubris subperstatis villosis 8—10 mm longis subtentis, glomerulis demum inter se 2—3 cm distantibus, in spicis interruptis 8—20 cm longis rubro-villosis dispositis; calycibus florentibus 18—20 cm longis extus pilis crassioribus 2—2,5 mm longis pulchre rubro-villosis, pedicellis 5—6 mm longis elatis, labiis 5—7 mm longis breviter acuminatis in maturitate 18—22 mm longis; corollarum coccinearum tubo 33—34 mm longo lenissime ventricoso intus nudo, labia superiore 15 mm alta, inferiore 8—9 mm longa.

Brasilia: Minas Geraes: in silvis primitivis prope pagum Rio Vermelho; in distr. Vicosa in via inter Fazenda da Grama et Aceponga, 950 m.

375. **S. salicifolia** Pohl, Pl. Bras. Ic. **2**, 140, t. 196, 1831 per specim. in Brasiliae prov. Minas Geraes prope Queluz in dumetis a Pohl (no. 3707) lectum constituta est; typum in herb. Mus. Vindob., isotypum in herb. Monac. vidi. — *S. Mariana* Mart. ex Benth., Lab. 282, 1833 et in DC., Prodr. **12**, 329, 1848 per specim. in Brasiliae prov. Minas Geraes in rupestribus humidis sylvaticis ad Mariana a Martius lectum constituta est; typum in herb. Mus. Monac. vidi. — *S. arguta* Benth., Lab. Gen. et Sp. 283, 1833 (nomen).

Frutex ramis villosis; foliorum laminis 6—9 cm longis, 1,5 ad 3 cm latis, anguste ellipticis elliptico-lanceolatisve subcoriaceis, utrimque acutis leniter acuminatisve, petiolis 3—6 mm longis elatis, margine obscure serrulato, subintegro, pagina superiore hirtella, inferiore praesertim ad venas villosula; floribus 3—6 in verticillastris bracteis ovato-acuminatis, 6—10 mm longis hirtellis perstatis subtentis, glomerulis demum inter se 1—3 cm

distantibus in paniculis sat amplis villosis dispositis; calycibus florentibus extus molliter lanatis 18—25 mm longis, in maturitate vix auctis, coriaceis saepe glabris, labiis 7—12 mm longis, superiore acuta, inferiore laciniis acutis vel leniter acuminatis, fere ad apices connatis, pedicellis 8—10 mm longis pubescentibus elatis; corollarum tubo 32—36 mm longo superne leniter ventricoso intus nudo, labia superiore 15—20 mm alta, inferiore 10—12 mm longa.

Brasilia: Minas Geraes: Tate; Ouro Preto: ad rivulum Mantiqueira; Queluz in dumetis; in rupestribus humidis sylvaticis ad Mariana; Rio Janeiro: in Serra dos Orgãos.

376. **S. Sellowiana** Benth. in DC., Prodr. **12**, 329, 1848 per specim. in Brasiliae verisimiliter prov. Rio Janeiro a Sellow lectum constituta est; typum in herb. Kew., isotypos in herb. Mus. Berol., Gray. et Univ. Calif. (Los Angeles) vidi.

Frutex ut videtur ramis glabris; foliorum laminis 7—14 cm longis, 2,5—6 cm latis, ovatis vel ovato-lanceolatis, leniter acuminatis, in basi rotundato-angustatis, utrimque glabris, margine serrato, petiolis 1—4 cm longis elatis; floribus 1—3 in verticillastris bracteis ovato-lanceolatis glabris longissimis 1,5—4 cm longis subtentis, glomerulis in spicas interruptas laxas breves approximatis, infimis interdum omnibus in foliorum supremorum axillis dispositis; calycibus florentibus 2,5—3 cm longis glabris, labiis subaequilongis ambabus integris acuminatis 6—15 mm longis, in maturitate vix auctis, pedicellis 4—6 mm longis elatis; corollarum tubo 30—45 mm longo intus nudo superne ventricoso, labia superiore 12—17 mm alta, inferiore paulo breviore.

Brasilia: Rio Janeiro: in Serra do Itatiaia in silvis, Reserva Forestal, 1100 m; ad Fazenda do Itatiaia; Novo Friburgo; Serra do Itatiaia prope Sa. Maciera ad marginem silvae primaevae; Minas Geraes: Passo Quatro Mun. de Virginia, 1500 m; Serra do Picu.

377. **S. macrocalyx** Gardn. in Lond. Journ. Bot. 4, 133, 1845 per specim. in Brasiliae prov. Rio Janeiro in silvis inter montes Orgãos et Novo Friburgo a Gardner (no. 5827) lectum constituta est; typum in herb. Mus. Brit., isotypos in herb. Kew., Delessert., Vindob., Berol., et Univ. Calif. (Los Angeles) vidi.

Frutex altitudine ad 3 m et ultra ramis villosis; foliorum laminis 7—15 cm longis, 2—4 cm latis, elliptico-lanceolatis utrimque acutis vel in apice leniter acuminatis, margine serrulato, pagina superiore hirtella vel glabra viridi, inferiore pallidiore molliter villosula, petiolis 3—10 mm longis elatis; floribus 1—3 in verticillastris bracteis ovato-acuminatis 5—10 mm longis perstatis tomentellis subtentis, glomerulis inter se 1—2 cm distantibus in

spicis interruptis 5—25 cm longis dispositis; calycibus florentibus 15—17 mm longis extus densissime mollissime rubro-lanatis, in maturitate fere 2 cm longis, labiis integris obtusis subaequilongis 5—6 mm longis, inferiore interdum leniter bifida, pedicellis 5—8 mm longis elatis; corollarum tubo 30—33 mm longo superne ventricoso intus nudo, labia superiore 15—16 mm alta, inferiore 8—10 mm longa.

Brasilia: Minas Geraes: Caldas; prope vicum S. João del Rey; inter Minas Geraes et Rio Janeiro; ad Sitio de Barbacena; Rio Janeiro: Novo Friburgo; in Serra dos Orgãos et Parahiba.

66. Sect. **Muricatae.**

Frutices foliis obovato-ellipticis coriaceis scabris; floribus 3—6 in verticillastris bracteis caducis subtentis in spicis interruptis brevibus sparsis dispositis; calycum labia superiore 3-venia: corollarum coccinearum tubo plus minusve arcuato, integro, intus nudo, labia inferiore quam superior breviore; staminibus in faucibus positis in galea inclusis; stylo sparse piloso, ramo postico longiore. Species una cubensis *S. scabrata*.

378. **S. scabrata** Britton et Wils. in Mem. Torr. Bot. Cl. 16. 99, 1920 per specim. in Cuba prov. Oriente ad rivulum in saxosis prope Camp San Benito Oriente a Shafer (no. 4075) lectum constituta est; typum in herb. horti bot. Nov. Eborac. vidi.

Frutex sparsus altitudine ad 1 m et ultra, ramulis pilis brevibus incrassatis asperrimis; foliorum laminis coriaceis 4—6 cm longis plerumque ellipticis frequenter obovatis, obtusis, in basi ad petiolos 3—8 mm longos angustatis, marginibus praesertim supra medium irregulariter crenato-serratis, paginis ambabus glaberrimis, superiore muricata et (sicca) irregulariter rugosa; floribus 3—6 in verticillastris bracteis caducis subtentis in spicis interruptis laxis axillaribus 8—10 cm longis dispositis, glomerulis paucis inter se 2,5—5 cm distantibus; calycibus florentibus extus glabris nisi ad venas sparsissime hispidulis 12—13 mm longis, labiis acuminatis aequilongis tubum aequantibus superiore 3-venia; corollarum coccinearum tubo superiore sat amplo 20—22 mm longo, labia superiore galeata 13 mm longa; stylo sparse piloso.

Cuba: Oriente: Camp San Benito Oriente, ad rivulum; Camp La Gloria ad Sierra Moa.

67. Sect. **Erythrostachys.**

Subsect. *Erythrostachys* Epl. in Rep. Spec. Nov., Beiheft 85, 100, 1936; species typica est.

Frutices speciosi interdum arbores, foliis nunc subreniformibus nunc ovatis acuminatis, saepius subtus glandulis sessilibus aureis

conspersis, caeterum glabratis vel pubescentibus; floribus oppositis bracteis caducis parvis subtentis in paniculis speciosis saepe foliosis dispositis; calycibus campanulato-inflatis, saepius rubris, chartaceis, labiis brevibus; corollarum tubo intus nudo nullomodo invaginato superne gradatim ampliato, labiis subaequilongis, inferiore saepius paulo breviore deflexa; staminibus sub labia superiore inclusis; rarius *S. Regla* exsertis; gynobasis cornu quam ovula longiore. Plantae modo texano-mexicanae modo colombianae.

Calyces 18—25 mm longi labiis breviter acuminatis; plantae colombianae . . . . . . 382. *S. libanensis*
Calyces 10—20 mm longi labiis obtusis vel subacutis; plantae mexicanae
Folia habitu *Populi* saepe subreniformia . 379. *S. Regla*
Folia ovata acuminata
Calyces subglobosi in basi rotundati . . 361. *S. Sessei*
Calyces campanulati infra medium angustati in basi acutiusculi . . . . . 380. *S. pubescens*

S. pubescens is about intermediate in habit with *S. Regla* and *S. Sessei*. The flowers of all are similar. As indicated, the calyces of *S. Sessei* seem constantly rounded at the base and quite glabrous, those of *S. Regla* and *S. pubescens* narrowed toward the base and thinly pubescent. Those of *S. Regla*, however, tend to be more regularly funnel-shaped and are narrower in proportion; those of *S. pubescens* tend to flare rather abruptly above the middle. The leaves of *S. pubescens*, while similar to those of *S. Sessei*, are intermediate in size and frequently approximate to the largest of *S. Regla*. They are usually more pubescent than those of *S. Sessei*. In inflorescence, also, *S. pubescens* occupies an intermediate position. The flowers of *S. Regla* are on usually short (2—3 cm) branchlets, produced in the upper leaves. Those of *S. pubescens* are similar but are crowded more in the upper axils, the leaves of which are more reduced. In *S. Sessei* a distinct panicle is formed.

379. **S. Regla** Cav., Ic. 5. 33, t. 455. 1799 per specim. in Mexico in fundo de Regla a Neé lectum constituta est; non typum sed iconem vidi. — *S. deltoidea* Pers., Syn. 1, 28, 1805 per *S. Regla* Cav., l. c. constituta est. — *S. crenata* M. et G. in Bull. Acad. Brux. 11, II, 74, 1844 per specim. in Mexico prov. Hidalgo prope Ixmiquilpan in silvis El Sabino a Galeotti (no. 704) lectum constituta est; typum in herb. Brux. vidi.

Frutex speciosus altitudine ad 1,5 m et ultra interdum arbor parva ramulis fere glabris puberulis; foliorum laminis plerumque 2—5 cm longis late deltoideo-ovatis interdum subreni-

formibus, petiolis 5—12 mm longis elatis, in apice obtusis vel breviter acuminatis, in basi saepius truncatis, marginibus crenatis, pagina superiore fere glabra, inferiore hirtella et glandulis sessilibus siccis aureis punctatis; floribus speciosis oppositis in foliorum supremorum axillis dispositis vel racemos breves formantibus, pedicellis gracilibus elatis; calycibus florentibus infundibuliformibus 10—22 mm longis subinflatis, sparse hirtellis, labiis obtusis in maturitate vix auctis; corollarum tubo 25—40 mm longo.

The plants of Durango have more deltoid leaves which tend to be more acute, more sharply serrate and more pubescent beneath.

Texas: Brewster (Chisos Mts.). — Mexico: Durango: Santiago Papasquiaro: Tepehuanes; Neuvo Leon: ad Galeana, 2400 m; Coahuila: San Lorenzo Canyon, Saltillo, 1800—1900 m; Sierra Guadaloupe ad La Cuchilla, 2400—2500 m; Sierra de Parras: San Luis Potosi: in silvis umbrosis prope San Rafael: Sierra de San Miguelito, 2100—2300 m; San Dieguito; Guanajuato: Acambaro: Guanajuato in collibus aridis; Hidalgo: Zimapan: Sierra de la Mesa; Aguas Calientes: ad rivulos ad oppidum: Oaxaca: Coixtlahuca, 2300—2500 m; Cerro Verde.

380. **S. pubescens** Benth., Lab. Gen. et Sp., Suppl. 723, 1835 et in DC., Prodr. 12, 332, 1848 per specim. in Mexico prov. Oaxaca prope San Dionicio ab Andrieux (no. 143) lectum constituta est; typum in herb. Kew., isotypos in herb. DC., Gray, et Vindob. vidi. — (?) *S. adglutinans* Lagasca, Gen. et Sp. Nov. 2, 1816 per specim. in Mexico a Mociño et Sessé lectum constituta est; typum non vidi. — (?) *S. agglutinans* Roem. et Schult., Syst. 1, 582, 1817 per specim. in Mexico a Mociño et Sessé lectum constituta est: typum non reperire potui. — *S. muralis* Fern. in Proc. Am. Acad. 43, 65, 1907 per specim. in Mexico prov. Guerrero e fissuris pendulum in praeruptis Iguala a Pringle (no. 10072) lectum constituta est; typum in herb. Gray., isotypos complures vidi.

Frutex altitudine ad 3 m, ramulis pubescentibus demum glabris, internodiis 1—3 cm longis; foliorum laminis 4—12 cm longis, 2—8 cm latis ovatis, breviter acuminatis, in basi saepius rotundatis interdum ad petiolos pubescentes 1—3 cm longos angustatis interdum subtruncatis, margine crenato-serrato, pagina superiore hirtella, inferiore nunc molliter pubescente nunc glabrata; floribus oppositis in verticillastris bracteis ovatis obtusis villosis caducis subtentis in paniculis brevibus speciosis plus minusve foliosis dispositis; calycibus florentibus extus leniter hirtellis 16—20 mm longis, in maturitate paulo auctis, turbinatis infra medium angustatis et in basi acutiusculis, labiis 3 ad

4 mm longis subacutis, pedicellis 2—4 mm longis elatis; corollarum tubo 25—40 mm longo, labia superiore 15—20 mm alta, inferiore subaequilonga.

In view of the degree of variation occurring in the valley of Oaxaca there is little basis for maintaining *S. muralis*. Lagasca's description suggests strongly that he had this species in view, but I have seen no specimen of Sessé's referable here. The reference to viscidity also raises a doubt. With the increase of material I find it difficult to separate this species from *S. Sessei*.

Mexico: Mexico: Temascaltepec, San Jose; Oaxaca: Monte Alban, 1900 m; Oaxaca, 1700—2200 m; San Dionicio; Cerro de San Antonio, 1800 m; Tlapancingo, 2000—2600 m; Guerrero: in angustiis Iguala, 1000 m; Mina: Rio Frio, 1300 m.

381. **S. Sessei** Benth., Lab. Gen. et Sp. 288, 1833 et in DC., Prodr. 12, 332, 1848 per specim. in Mexico a Mociño et Sessé lectum constituta est; typum cum nomine *S. calycinflata* M. et S. ex Benth., l. c., per specim. idem olim in herb. Lambert hodie in herb. horti bot. Oxon. et specim. verum in herb. horti bot. Matrit. etiam in herb. Boiss. vidi. — *S. Roezli* Scheidw., Fl. des Serres 14, 31, t. 1407, 1861 per specim. hortatum constituta est. — (?) *S. semperflorens* La Llave in La Nat. 7, Apend. 81, 1885. — *S. fastuosa* Sessé et Moc., Pl. Nov. Hisp. ed. 2, 7, 1893 et *S. calycinflata* Sessé et Moc., Fl. Mex. ed. 2, 6, 1824; spec. ex herb. hort. bot. Matrit. vidi. — *Rhodochlamys speciosa* Schauer in Linnaea 20, 707, 1847 per specim. ab Aschenborn in Mexico lectum constituta est; typum non vidi.

Frutex arborescens speciosus altitudine ad 5 m, ramulis puberulis, internodiis 2—5 cm longis; foliorum laminis 5—12 cm longis, 2,5—6 cm latis, ovatis, acuminatis, in basi rotundatis, petiolis 1—3 cm longis puberulis elatis, margine crenato-serrato paginis ambabus sparse hirtellis; floribus oppositis in verticillastris bracteis ovatis caducis subtentis, in paniculis speciosis amplis dispositis; calycibus florentibus glabris, subglobosis, in basi rotundatis 1,5—2 mm longis elatis, labiis 3—4 mm longis, obtusis; corollarum tubo 28—35 mm longo, labia superiore 15 ad 18 mm alta, inferiore subaequilonga.

Mexico: Mexico: Temascaltepec, Puerto Salitre, 1300 m, et Cumbre Tejupilco, 200 m; Morelos: Cuernavaca, 1600—2200 m; Puebla: Teziutlan; Jalisco: Tuxpan; Santa Cruz; Guerrero: Apectla, 1000 m; Mina: Zihuagio-Ojo de Aqua, 1360 m; Sierra Madre del Sur: Petlacala, 1750 m in pineto.

382. **S. libanensis** Rusby, Descr. New. Sp. S. Am. Pl. 111, 1920 per specim. in Colombia prov. Magdalena in Sierra del

Libano, alt. 2000 m, a H. H. Smith (no. 1380) lectum constituta est; typum in herb. horti bot. Nov. Eborac., isotypos in herb. Gray. et horti bot. Missour. vidi.

Frutex speciosus altitudine ad 3 m, ramis dense rugo-villosis; foliorum laminis late ovatis 10—18 cm serratis, paginis ambabus hirsutis, petiolis 4—7 cm longis elatis; floribus 6 in verticillastris bracteis rotundato-acuminatis deciduis 15—25 mm longis subtentis, in spicis interruptis speciosis dispositis, glomerulis demum inter se 1,5—2,5 cm distantibus; calycibus florentibus campanulatis saturate coccineis interdum viridibus 20 mm longis, extus sparse rubro-villosis, membranaceis reticulato-venulosis, in maturitate 25—26 mm longis, pedicellis 15—20 mm longis elatis: corollarum tubo 38 mm longo crasso leniter ventricoso, sub labia inferiore constricto intus nudo, labia superiore 20—22 mm alta, inferiore subaequilonga.

Colombia: Magdalena: in Sierra del Libano, 2000 m; in Sierra San Lorenzo prope Santa Marta, 2200 m.

68. Sect. Silvicolae.

Frutices glabri foliis oblongo-lanceolatis sat amplis serrulatis; floribus 3—6 in verticillastris in spicis interruptis dispositis bracteis caducis subtentis: calycum labia superiore 3-venia; corollarum coccinearum tubo amplo recto intus nudo integro, labia superiore quam inferior longiore; staminibus ad fauces positis, in galea inclusis; styli glabri ramo postico longiore. Species una mexicana *S. miniata*.

Separable from *Tubiflorae* primarily by reason of habit and the scarlet corolla; from *Muricatae* chiefly on the basis of habit and the conformation of the corolla.

383. **S. miniata** Fern. in Proc. Am. Acad. 35, 545, 1900 per specim. in Mexico prov. Chiapas in silvis a Ghiesbreght (no. 760) lectum constituta est; typum in herb. Gray. vidi.

Frutex glaber ramulis gracilibus; foliis oblongo-lanceolatis 12—18 cm longis, acuminatis, infra medium ad petiolos 1—3 cm longos cuneato-angustatis marginibus serratis, paginis ambabus glabris inferiore in umbis purpurea; floribus 3—6 in verticillastris bracteis caducis subtentis, glomerulis demum inter se 1—3 cm distantibus in spicis interruptis glabris gracilibus 20—25 cm longis dispositis; calycibus rubris glabris florentibus 9—10 mm longis; corollarum coccinearum tubo sat amplo 25 mm longo intus nudo, labia superiore 10 mm alta, inferiore longiore; stylo glabro.

Mexico: Chiapas: Las Nubes prope San Bartolo, 1600 m. — Br. Honduras: Camp 32 B. H. Geol. Survey, hilltop in open forest, 900 m.

69. Sect. **Coeruleae.**

Herbae perennes pulchellae foliis sat amplis ovatis; calycum labiis ambabus subaequilongis 7-veniis; floribus in spicis speciosis interruptis dispositis, bracteis caducis subtentis; corollarum caerulearum tubo superne gradatim ampliato vix ventricoso intus nudo, labia inferiore quam superior breviore; staminibus in galea inclusis; gubernaculo in dentem retrorsum producto; stylo piloso, interdum glabrato, ramo postico tenui quam anticus vel breviore vel longiore. Plantae austro-americanae.

Folia in basi abrupte extenuata; styli ramus posticus longior . . . . 386. *S. atrocyanea*
Folia in basi rotundata; styli ramus posticus brevior
  Ramuli superne pilis extensis glandulosis conspersi; folia subtus molliter pubescentia . . . . 385. *S. guaranitica*
  Ramuli et folia glabri . . . . 384. *S. ianthina*

I have associated *S. ianthina* with two south American species; *S. atrocyanea* and *S. guaranitica* Asa Gray, however, in an herbarium note, has suggested that this species is a hybrid between *S. splendens* and *S. mexicana*. This is a good guess. I have nowhere seen any other than cultivated specimens.

384. **S. ianthina** Otto et Dietr. in Allg. Gartenztg. **15**, 362, 1847 per specim. e seminibus americanis eductum constituta est; non typum sed specim. verum in herb. Berolin. vidi.

Herba elata ramulis superne hirtellis; foliorum laminis ovatis verecundis 4—8 cm longis, acuminatis, in basi rotundatis, petiolis gracilibus 3—6 cm longis elatis, paginis ambabus minute hirtellis fere glabris, marginibus crenato-serratis; floribus 1—3 in verticillastris bractei caducis subtentis in spicis laxis 10—20 cm longis dispositis, glomerulis demum inter se 1—2 cm distantibus; calycibus 15—17 mm longis, extus ad venas minute hirtellis, pulcherrime atrocyaneis; corollarum intense atro-cyanearum tubo 30 mm longo, labia superiore 13 mm alta, inferiore breviore ut videtur incurva.

Known only from cultivated specimens.

385. **S. guaranitica** St. Hil. ex Benth., Lab. Gen. et Sp. 298, 1833 et in DC., Prodr. **12**, 330, 1848 per specim. in Brasiliae prov. Rio Grande do Sul a St. Hilaire (no. 2756) lectum constituta est; typum in herb. Mus. Par., isotypum in herb. Univ. Calif. (Los Angeles) vidi. — *S. coerulea* Benth., Lab. Gen. et Sp. 298, 1833 et in DC., Prodr. **12**, 330, 1848 per specim. in Brasiliae verisimiliter prov. Rio Grande do Sul a Sellow (no. 1083) lectum constituta est; typum in herb. Mus. Berolin., isotypum in Univ. Calif. (Los Angeles) vidi (non *S. caerulea* L., Sp. Pl. 26, 1753). —

S. ambigens Briq. in Bull. Soc. Bot. Genève 5, 120, 1889 per specim. in Paraguay in silvis prope Caaguazu a Balansa (no. 991) lectum constituta est; specim. vera in herb. Mus. Par. et Boissier. vidi. — *S. melanocalyx* Briq. in Bull. Herb. Boiss. 4, 862, 1896 per specim. cultum in Argentina prope Cordoba a Kuntze lectum constituta est; typum in herb. Delessert. vidi. — *S. coerulea* var. *Regnellii* Benth., Linnaea 22, 567, 1849 per specim. in Brasiliae prov. Minas Geraes a Regnell (no. I, 315) constituta est; specim. certa in herb. Kew. et Stockh. vidi.

Herba verisimiliter suffruticosa altitudine ad 2 m et ultra, ramis ad nodos et in sulcis saepius crispule pubescentibus, internodiis pilis extensis glandulosis plus minusve hirsutis supremis 3—10 cm longis; foliorum laminis sat tenuibus. 4—15 cm longis, 2,5—7 cm latis, ovatis, in apice saepius leniter acuminatis, in basi rotundatis, infimis cordatis, petiolis 1,5—5 cm longis elatis, margine crenato-serrato; pagina superiore praesertim ad venas hirtella, inferiore nunc sparse nunc dense pubescente pallidiore; floribus speciosis 3—12 in verticillastris bracteis ovato-acuminatis vel lanceolatis 5—15 mm longis caducis subtentis, in spicas interruptas speciosas 15—30 cm longas approximatis, glomerulis inter se 1—3 distantibus, pedicellis 5—8 mm longis elatis; calycum florentium tubo saepe cyaneo extus praesertim ad venas pilis extensis glandulosis consperso 8—11 mm longo, labia superiore 2—7 mm alta acuminata, inferiore aequilonga subintegra, in maturitate paulo auctis; corollarum cyanearum tubo 20—33 mm longo intus nudo superne gradatim ampliato lenissime ventricoso, labia superiore 11—19 mm alta, inferiore 10—14 mm longa: stylo pilis gracillimis piloso breviter exserto, ramo superiore acutissime, inferiore longiore obtuso 2,5—4 mm longo.

A species of some variability particularly in density of pubescence and flower size. In general the size of the flowers and the density of pubescence diminish in situations from north to south, although a single plant, as for example Mosén 4316, may have fully developed corollas varying from 38—54 mm in length. The plants of Parana have the larger corollas of the more northern specimens but smaller calyces. *S. guaranitica*, *S. ambigens* and *S. melanocalyx* are representative of the smaller flowered forms; *S. coerulea* var. *Regnellii* is representative of the larger flowered forms with dense pubescence; Sellow's specimen, the type of *S. coerulea*, which has marked similarity to other specimens from Rio Grande do Sul, is more or less intermediate.

Brasilia: Minas Geraes: prope Caldas in ripa amnis Rio Verde; Rio Janeiro: Itatiaia; Parana: Iraty, in fruticetis rivalibus. 820 m; Rio Grande do Sul: ad Piratiny prope Pelotas, in ripa

umbroso rivuli in Capao; Santa Cruz, Neu-Württemberg, 450 m. — Paraguay: in regione Alta Parana: Paraguari: in Serra de Maracayu; in Serra de Amambay; in Cordillera de Villa Rica; in silvis prope Caaguazu. — Uruguay: Arroyo Malo, Paysandu; Salto: ad flumen Salto Grande; in silvis prope Itapebi Grande. — Argentina: Misiones: Posadas: Bonpland. in ripa amnis Martires Chico: inter Guaraipo et Saltino: San Ignacio.

386. **S. atrocyanea** Epl. in Rep. Spec. Nov., Beiheft **85**, 98, 1936 per specim. in Boliviae prov. Tarija prope Narvais inter Tarija et Gran Chaco in locis humidis in regione *Podocarpi angustifolii* et *Alni ferrugineae* a Fries (no. 1282) lectum constituta est; typum in herb. Mus. Stockh., isotypum in herb. Berolin. vidi.

Herba insignis altitudine 1—1,5 m caulibus superne ramosis tenuiter pubescentibus; foliorum laminis 6—10 cm longis, 3—5 mm latis, ovatis, in apice acutis vel breviter acuminatis, in basi rotundatis, mediis ad petiolos 0,5—1 cm longos marginatos abrupte cuneato-angustatis, supremis rotundato-angustatis sessilibus, omnibus serrulatis, pagina superiore pilis appressis hirtella, inferiore pallidiore tenuiter pubescente; floribus speciosis 3—6 in verticillastris bracteis perstatis membranaceis atrocyaneis 1—2 cm longis late ovatis amplexis subtus pubescentibus subtentis, glomerulis demum inter se 8—15 mm distantibus in spicas interruptas 6—15 cm longas confertis, pedicellis 3—4 mm longis elatis; calycum florentium tubo 10—11 mm longo extus breviter pubescente, labiis subaequilongis, in maturitate tubo 15 mm longo submembranaceo 13-venio, labia superiore rotundata mucronata circiter 6 mm longa, inferiore laciniis acutis infra medium connatis; corollarum atrocyanearum tubo in basi albido 23—24 mm longo superne gradatim ampliato lenissime ventricoso intus nudo, labia superiore 14—15 mm alta, inferiore 7,5—8 mm longa; stylo piloso breviter exserto ramo postico quam anticus longiore.

Bolivia: prope Narais inter Tarija et Gran Chaco in locis humidis in regione *Podocarpi angustifolii* et *Alni ferrugineae*, 2000—2500 m.

70. Sect. **Cardinales**.

Herbae vel suffrutices alti insignes ramulis interdum glabris interdum pilis ramosis tomentosis; foliis ovatis rarius subcordatis saepius acuminatis sat amplis petiolatis; floribus plerumque 12 et ultra in glomerulis, rarius oppositis, in spicis vel racemis speciosis dispositis, bracteis caducis frequenter grandibus coloratis concavis subtentis, calycum saepius coloratorum labia superiore 5—7-venia acuminata etiam caudata quam inferior longiore; corollarum tubo

complanato intus ad basim papillis binis longioribus ornato et saepius ventricoso invaginato, labia superiore galeata quam inferior longiore; staminum inclusorum gubernaculo ad medium infra connexum saepius in dentem producto; stylo ad apicem piloso, ramo antico breviore obtuso vel truncato postice attenuato. Species typica est *S. cardinalis*. Plantae mexicanae etiam centrali-americanae.

Caules superne pilis ramosis plus minusve tomentosi
- Foliorum laminae in basi saepius rotundatae; species mexicanae . . . . 390. *S. Karwinskii*
- Foliorum laminae in basi saepius angustatae plerumque oblongae; plantae centrali-americanae . . . . 389. *S. siguatepequensis*

Caules glabri vel pilis simplicibus vestiti
- Herbae foliis saepius ad caulis basim confertis deltoideis . . . . 388. *S. stolonifera*
- Herbae vel suffrutices foliis ad ramulos aequaliter dispositis
  - Verticillastra bracteis insignibus coloratis subtenta
    - Bracteae attenuatae; corollarum labia superior 15 mm longa . . . . 387. *S. cardinalis*
    - Bracteae rotundatae concavae; corollarum labia superior 6—7 mm longa
      - Folia ad basim angustata; plantae centrali-americanae . . . . . . 392. *S. Wagneriana*
      - Folia ad basim rotundata vel cordata: plantae mexicanae
        - Calyces florentes magnam partem 12—13 mm longi; glomeruli inter se circiter 1 cm distantes 393. *S. involucrata*
        - Calyces florentes magnam partem 15 mm longi, maturi 2 cm longi; glomeruli inter se 2,5—4 cm distantes . . . . 394. *S. puberula*
  - Verticillastra bracteis parvis inconspicuis subtenta (vide etiam *S. puberulam*) . . . . 391. *S. Holwayi*

Tubiformes.

Herbae corollarum tubis vel integris vel leniter invaginatis, labia superiore 12—15 mm alta.

387. **S. cardinalis** Kunth in Humboldt et Bonpland, Voy., Nov. Gen. et Sp. Pl. 2, 301, t. 151, 1817 per specim. in Mexico inter Toluca et Tianguillo a Humboldt et Bonpland lectum constituta est; typum in herb. Mus. Berol. et isotypum in herb. Mus. Par. vidi. — *S. Boucheana* Kunth, Ind. Sem. Hort. Berolin. 9, 1845 per specim. cultum constituta est; typum in herb. Berol. vidi. — ? *S. pendula* Sessé et Moc., Fl. Mex. ed. 2, 8, 1894. — *S. grandiflora* Sessé et Moc., Pl. Nov. Hispan. ed. 2, 7, 1893 et Fl. Mex. ed. 2, 9 (non 5), 1894; specimina ex herb. horti Matrit. vidi.

Herba perennis altitudine ad 1 m, caulibus maximam partem strictis superne pilis extensis glandulosis pubescentibus; foliorum laminis ovatis 6—8 cm longis, in apice leniter acuminatis, in basi rotundatis etiam leniter cordatis, marginibus saepius convexis frequenter rectis crenato-serratis, pagina superiore hirtella, inferiore pubescente, petiolis 1—4 cm longis elatis; floribus 4—6 in verticillastris rarius oppositis in racemis speciosis 10—20 cm longis dispositis, bracteis caducis attenuatis saepius incarnatis etiam 3—4 cm longis subtentis; calycibus florentibus extus pilis crassiusculis sparse pubescentibus plerumque 17—18 mm longis, in maturitate paulo auctis; corollarum tubo maximam partem 29—33 mm longo.

Mexico: Mexico: in Sierra de las Cruces in silvis temperatis, 3100—3500 m; San Nicolas; in Sierra de Ajusco; Rio Frio; Puebla: Ixtaccihuatl, 2600—3200 m; Popocatepetl; Michoacan; Tlalpujahua, 2400—2700 m.

388. **S. stolonifera** Benth., Pl. Hartweg. 70, 1840 per specim. in Mexico prope La Parada a Hartweg (no. 505) lectum constituta est; typum in herb. Kew., isotypum in herb. Univ. Calif. (Los Angeles) vidi.

Herba perennis altitudine 60 cm, caulibus in basi ramosis stoloniformibus subglanduloso-villosis, internodiis ad basim 0,5—1 cm longis superne gradatim ampliatis 2—10 cm longis; foliorum laminis 2—4 cm longis, 2—4,5 cm latis, deltoideis, obtusis, in basi late cordatis, rarius subtruncatis, margine fere recto subcrenato, paginis ambabus villosis, petiolis villosis 1,5 as 4 cm longis elatis; floribus 1—3 in verticillastris bracteis caducis subtentis, glomerulis inter se 2—6 cm distantibus, in racemis scapoideis 10—40 cm longis dispositis; calycibus florentibus extus villosis, 10—12 mm longis, labia superiore 3—4 mm longa, rotundata, mucronata, inferioris laciniis acutis ad basim connatis, pedicellis 2—3 mm longis elatis, in maturitate paulo auctis; corollarum tubo amplo 30—35 mm longo, intus ad basim papillis duabus erectis 6—7 mm longis in apice furcatis ornatis, labia superiore 12 mm alta, inferiore 9—10 mm longa.

Mexico: Oaxaca: Sierra de San Felipe, 2500—3100 m; La Parada; Sierra de Oaxaca. 2300 m; Cumbre de Ixtepec; Telixtlahuaca.

Ventricosae.

Suffrutices interdum frutices corollarum tubis patenter ventricosis ad basim invaginatis; labia superiore 6—7 mm alta.

389. **S. siguatepequensis** Standl. in Journ. Arn. Arb. 11, 40, 1930 per specimen in Honduras prope Siguatepeque a Standley (no. 55917) lectum constituta est; typum in herb. Mus. Field., isotypum in herb. Smithson. vidi.

Frutex altitudine ad 4 m ramulis pilis ramosis ferrugineis dense vestitis; foliorum laminis 10—15 cm longis, oblongo-ellipticis, rarius anguste ovatis, in apice saepius acuminatis, in basi ad petiolos 1—1.5 cm longos angustatis. paginis ambabus pilis ramosis sat dense vestitis, inferiore cinerea, marginibus crenato-serratis; floribus saepius 6 in verticillastris bracteis inconspicuis caducis subtentis in racemis 10—30 cm longis dispositis; calycibus florentibus 11—14 mm longis extus pilis extensis viscidis vestitis, in maturitate vix auctis, labiis 5—9 mm longis, caudatis; corollarum tubo 18—23 mm longis.

Very similar to *S. Karwinskii* differing chiefly in small details of habit, particularly the more oblong leaves.

Guatemala: sine loco (Skinner). — Honduras: Siguatepeque: Comayagua in silvis, 1080—1400 m. — Nicaragua: San Rafael del Norte, 1200—1350 m.

390. **S. Karwinskii** Benth., Lab. Gen. et Sp. Suppl. 725, 1835 et in DC., Prodr. 12. 345, 1848 per specim. in Mexico a Karwinski lectum constituta est; typum in herb. Vindob. vidi. — *S. Lindenii* Benth. in DC., Prodr. 12, 333, 1848 per specim. in Mexico prov. Chiapas inter Botchil et Cuidad Real a Linden (no. 128) lectum constituta est; typum in herb. Kew., isotypos in herb. Brux., et Delessert. vidi.

Suffrutex altitudine ad 5 m ramulis pilis ramosis subtomentosis, internodiis 3—6 cm longis; foliorum laminis 4—13 cm longis, ovatis vel acutis vel leniter acuminatis, in basi rotundatis etiam subcordatis rarius rotundato-angustatis, margine convexiusculo serrato, paginis ambabus pilis ramosis vestitis, superiore sparse villosula, inferiore tomentosa cinerea, petiolis 1—4 cm longis elatis; floribus 6 et ultra in verticillastris bracteis caudis parvis subtentis, glomerulis demum inter se 1—3 cm distantibus; calycibus florentibus extus glanduloso-hispidulis, 12—15 mm longis, in maturitate 15—18 mm longis, labiis 7—10 mm longis acuminato-caudatis, inferioris laciniis vel sub caudis vel omnino leniter

connatis, pedicellis 1—1,5 cm longis elatis; corollarum tubo 19 ad 25 mm longo.

Mexico: Oaxaca: inter Plunia et San Miguel Suchistepec, 2600—3100; Pueblo Nuevo; Chiapas: inter San Sebastian et Pautepec: Cerro del Boqueron; in silvis montanis inter Huitztan et Oxchuc: inter Botchil et Cuidad Real; Rio Hondo ad Hacienda del Barrero; Siltepec: Pinada. — Guatemala: Volcan Agua. Sacatepequez, 1800—3400 m; inter Santa Maria et Quezaltenango: inter Columba et Quezaltenango: Chimoltenango: Cumbre de Soledad, 8000 pp.

391. **S. Holwayi** Blake in Proc. Biol. Soc. Wash. 33, 113, 1919 per specim. in Guatemala in monte ignivomo Agua dicto prope pagum Santa Maria de Jesus ab Holway (no. 579) lectum constituta est; typum in herb. Smithson. vidi. — *S. Popenoei* Blake in Proc. Biol. Soc. Wash. 33, 114, 1920 per specim. in Guatemala prope Tactic a Popenoe (no. 928) lectum constituta est; typum in herb. Smithson. vidi.

Suffrutex vel herba perennis frequenter scandens longitudine ad 5 m, ramulis glabratis superne pilis extensis parvis glandulosis et longioribus viscidis: foliorum laminis 5—10 cm longis pulchre cordatis acuminatis. petiolis 1—4 cm longis elatis supremis sessilibus, marginibus serrulatis paginis ambabus sparse hirtellis frequenter glaberrimis inferiore pallidiore; floribus in spicis sat densis ad 15 cm longis, frequenter paniculatis speciosis. bracteis caducis glomerulis, inferioribus tamen bracteis subfoliosis perstatis subtentis; calycibus florentibus 7—14 mm longis, extus pilis brevibus glandulosis et longioribus in basi crassiusculis ornatis, in maturitate paulo auctis; corollarum tubo 20—23 mm longo.

Mexico: Chiapas: inter San Cristobal et Teopisca, 2200 ad 2800 m. — Guatemala: Volcan de Agua supra Santa Maria de Jesus; Quezaltenango, 2100 m; San Rafael; Sunil: Jalapa. 3520 m; Tactic. 1525 m; Coban; Totonicapam, Cumbre del Aire. 3200 m; in quercetis prope Tecpam, 2100 m; Santa Elena, 2400 ad 2700 m; Santa Rosa (Salanca) in silvis; inter Santa Rosa et Purula. 1600 m; San Cristobal; Huehuetenango: Aguacatan in quercetis, 2100 m; Sierra Cuchumetanes, 3000 m.

392. **S. Wagneriana** Polak. in Linnaea 41, 591, 1877 per specim. in Costa Rica prope San Jose a Polakowsky (no. 387) lectum constituta est; typum in herb. Mus. Berol., isotypum in herb. Mus. Brit. vidi. — *S. Tonduzii* Briq. in Ann. Conserv. et Jard. Bot. Genève 2. 157, 1898 per specim. in Costa Rica prope San Jose a Tonduz (Pittier et Durand no. 1476) lectum constituta est; typum in herb. Mus. Brux. vidi.

Herba pulchra altitudine 1—3 m, caulibus glaberrimis rubris glaucis, solum inter flores pilis extensis glandulosis vestitis; foliorum laminis ovatis 8—10 cm longis, acuminatis, in basi angustatis etiam cuneatis rarius subrotundis, petiolis rubris 2—5 cm longis elatis, marginibus serrulatis, paginis ambabus glaberrimis, inferiore pallidiore rarius ad venas sparse hirtella; glomerulis rubris confertis spicas speciosas viscidas 15—30 cm longas formantibus bracteis rotundato-concavis rubris plerumque ciliatis saepius rubro-hirtellis insignibus deciduis subtentis; calycibus florentibus 14 ad 15 mm longis rubris, extus pilis extensis glandulosis viscidis, in maturitate paulo auctis latioribus; corollarum tubo 22—34 mm longo.

Guatemala: Coban, 1400 m; Volcan Fuego, 2000 m; San Andres; Duenas; Sacatepequez: Santa Maria, 5500 pp: Jumaytepeque, 2000 m; Solola; Sabana de Eloi, Pacaya, Amatitlan, 1900—2000 m. — Salvador: Volcan San Vicente, 1200—1500 m. — Costa Rica: San Jose; Cartago; Santa Maria de Dota, S. Jose, 1500—1800 m; in campis Cervantes, Cartago, 1300 m; Cerrados Turrujal, S. Jose; Rio Reventado ad Cartago, 1460—1650 m.

393. **S. involucrata** Cav., Ic. 2, 3, t. 105, 1793 per specim. e seminibus mexicanis eductum in horto matrit. cultum constituta est; non typum sed icon vidi. — *S. laevigata* Kunth in Humboldt et Bonpland, Voy., Nov. Gen. et Sp. 2, 295, t. 147, 1817 per specim. in Mexico ad orbem lectum constituta est; non typum sed icon vidi. — *S. Palafoxiana* Sessé et Moc., Pl. Nov. Hisp. ed. 2, 8, 1893 et *S. ventricosa* S. et M., Fl. Mex. ed. 2, 7, 1894; specimina ex herb. hort. Matrit. vidi.

Herba pulchra altitudine ad 1 m, caulibus minutissime puberulis interdum glabris superne paulo rubris, inter flores pilis glandulosis extensis vestitis; foliorum laminis ovatis 6—15 cm longis, acuminatis, in basi rotundatis rarius subcordatis, petiolis 3—9 cm longis elatis, margine serrulato, paginis ambabus fere glabris, inferiore pallidiore; glomerulis inter se magnam partem 1 cm infimis interdum 2 cm distantibus spicas strictas 15—30 cm longas formantibus, bracteis deciduis rubris fere glabris rotundato-concavis subtentis; calycibus florentibus plerumque 12 ad 13 mm longis purpureo-rubris extus pilis extensis glandulosis viscidis, in maturitate paulo auctis; corollarum tubo 21—33 mm longo.

S. laevigata is apparently identical with *S. involucrata*. The relationship of *S. involucrata*, *S. puberula* and *S. Wagneriana* is not so clear. *S. puberula* and *S. involucrata* differ chiefly in the habit of foliage, the former being shallowly but distinctly cordate at the base, the latter rounded and narrowed. The former (found

in San Luis Potosi) has corolla tubes 32—33 mm long. and calyces 15—16 mm long. The verticils are 2—3 cm distant. No bracts are present. *S. involucrata* (found in Vera Cruz and ? Puebla) has corolla tubes about 25 mm long and calyces 10—13 mm long. No mature calyces are present on any specimens and it would appear from the specimens that they drop off soon after anthesis. The verticils are about 1 cm distant. The bracts are present in all specimens and are nearly glabrous, being at most finely puberulent and non-ciliate. *S. Wagneriana* on the other hand, while scarcely different from *S. involucrata* in habit of foliage would appear to have different flowers. In length of corolla tube and calyx it covers the range of both *S. involucrata* and *S. puberula*, but the calyces at maturity appear to be more flattened than those of *S. puberula* and are decidedly less acuminate. The pubescence of the inflorescence and calyces is also finer and more dense. The bracts are usually ciliate and commonly reddish pubescent, although sometimes puberulent. Since the whole aspect is such as to permit of ready recognition and since its distribution in distinctive, I have maintained it for the present.

Mexico: Vera Cruz: Zacuapan, Cosolapa; Puebla: Puebla.

394. **S. puberula** Fern. in Proc. Am. Acad. 35. 539, 1900 per specim. in Mexico prope San Luis Potosi (verisimiliter in Sierra Alvarez) a Parry et Palmer (no. 755) lectum constituta est: typum in herb. Gray.. isotypos plures vidi.

Herba altitudine ad 1 m et ultra, caulibus rubris minutissime puberulis inter flores pilis glandulosis extensis vestitis; foliorum laminis plerumque 8—15 cm longis, acuminatis, in basi saepius subcordatis, petiolis 3—9 cm longis elatis, margine serrulato, paginis ambabus fere glabris, inferiore pallidiore; glomerulis demum inter se 2,5—4 cm distantibus spicas strictas 15—30 cm longas formantibus, bracteis caducissimis rubris fere glabris ut videtur parvis subtentis; calycibus florentibus purpureo-rubris magnam partem circiter 15 mm longis in maturitate 2 cm longis, extus pilis extensis glandulosis viscidis; corollarum tubo 28—30 mm longo.

Mexico: San Luis Potosi: Sierra Alvarez, Alvarez, 2100 ad 2300 m.

71. Sect. **Conzattiana.**

Frutices insignes foliis sat parvis plerumque deltoideo-ovatis etiam palaeformibus saepius bullulato-rugosissimis, interdum pilis minutis ramosis incanis; floribus vel in racemis brevibus bracteis modo caducis modo perstatis parvis subtentis, vel in foliorum supremorum axillis saepius oppositis; calycibus plus minusve hispido-glandulosis, labia superiore 7—9-venia paulo longiore;

corollarum vel flavo-aurearum vel coccinearum tubo valde ventricoso saepe invaginato et intus infra medium rugis quatuor ornato, labiis subaequilongis; staminibus in galea inclusis, gubernaculo subintegro; stylo glabro, ramo postico longiore. Species typica est *S. aspera*. Plantae mexicanae imprimis oaxacanae.

Pili simplices
  Flores in racemis brevibus disposíti; corollae coccineae . . . . 396. *S. oaxacana*
  Flores in foliorum supremorum axillis dispositi; corollae flavo-aureae . . . . . . 395. *S. aspera*
Pili minuti ramosi . . . . 397. *S. pexa*

395. **S. aspera** Mart. et Gal. in Bull. Acad. Brux. 11, 2, 71, 1844 per specim. in Mexico in montibus calcareis prov. Puebla prope Tehuacan a Galeotti (no. 642) lectum constituta est; typum in herb. Mus. Brux., isotypos in herb. Kew. et Delessert. vidi.

Frutex sarmentosus altitudine ad 2 m, ramis griseis ramulis pilis extensis glanduloso-pubescentibus; foliorum laminis 1—2,5 cm longis, late deltoideo-cordatis, in apice rotundatis, marginibus fere rectis, crenulatis, pagina superiore hirtella bullato-rugosissima, inferiore pallidiore cinerea pilis glandulosis strictis ut videtur viscidis, petiolis 0.5—1,5 cm longis elatis; floribus 1—3 in foliorum axillis dispositis bracteis linearibus 3—4 mm longis subtentis: calycibus purpureis florentibus 12—14 mm longis extus pilis glandulosis extensis viscidis, in maturitate 15—20 mm longis, labiis circiter 7 mm longis; corollarum flavo-aurearum tubo 13—21 mm longo.

Mexico: Puebla: Tehuacan, 1600—1800 m; San Luis Tultitlanapa; (?) Oaxaca: Dominguillo, 1600—2100 m.

396. **S. oaxacana** Fern. in Proc. Am. Acad. 35, 536, 1900 per specim. in Mexico prov. Oaxaca in angustiis Dominguillo a Pringle (no. 5654) lectum constituta est; typum in herb. Gray., isotypum in herb. Univ. Calif. (Berkeley) vidi.

Frutex sarmentosus ramis griseis ramulis pilis extensis glandulosis pubescentibus; foliorum laminis plerumque 15—25 mm longis deltoideo-ovatis palaeformibus, in apice saepius rotundatis, in basi truncato-cordatis, marginibus saepius convexis crenulatis, pagina superiore bullato-rugosa glanduloso-hirtella, inferiore pilis ramosis incano-tomentosa, petiolis 4—6 mm longis elatis; floribus oppositis bracteis caducis subtentis in racemis 5—10 cm longis dispositis: calycibus florentibus 11—12 mm longis extus pilis extensis glandulosis sparse vestitis et glandulis sessilibus aureis conspersis, labia superiore tridentata, in maturitate ambabus auctis praesertim latioribus; corollarum coccinearum tubo 17 mm longo

valde ventricoso, in basi invaginato, labiis subaequilongis tubum aequantibus.

Mexico: Oaxaca: Rio de las Vueltas; Dominguillo Cañon, 1100 m; Puebla: Cerro de Mazize.

397. **S. pexa** Epling sp. nov. per specim. in Mexico prov. Oaxaca prope San Bernardino a Conzatti (no. 2094) lectum constituta est; typum in herb. Mus. Field. vidi.

Frutex ut videtur diffusus ramulis superne pilis minutis ramosis incanis elongatis; foliorum laminis ovatis 1—2 cm longis, in apice obtusis, in basi rotundatis, petiolis 4—8 mm longis elatis, marginibus crenulatis, paginis ambabus pilis minutissimis ramosis incano-tomentellis; floribus in racemis brevibus oppositis bracteis linearibus incanis 5—15 mm longis perstatis (? demum tarde deciduis) subtentis; calycibus florentibus 12—13 mm longis extus pilis minutis ramosis incanis, labia superiore 7-venia obtusa; corollarum coccinearum tubo 15—16 mm longo, infra medium invaginato et intus papillis binis ornato, superne sat ventricoso, labia superiore 8 mm alta, inferiore paulo longiore.

Mexico: Oaxaca: San Bernardino.

72. Sect. **Sphacelioides.**

Frutices vel herbae elatae foliis maximis subhastatis petiolatis; floribus 3—6 in verticillastris bracteis deciduis rubropurpureis speciosis subtentis, in spicis interruptis dispositis; calycum labiis subaequilongis acuminatis, superiore 7-venia, pedicellis maturis 10—12 mm longis; corollarum albo-rosearum tubo circiter 30 mm longo gradatim ampliato vix tamen ventricoso, intus nudo, labia superiore paulo longiore; staminibus in galea inclusis, gubernaculo ad connexum in dentem parvum producto; stylo piloso, ramo postico longiore. Species una mexicana: *S. subhastata*.

398. **S. subhastata** Epling sp. nov. per specim. in Mexico prov. vel Michoacan vel Guerrero in Sierra Madre a Langlassé (no. 570) lectum constituta est; typum in herb. Kew. vidi.

Frutex ut videtur vel herba elata altitudine 1 m, caulibus superne glanduloso-villosis internodiis 5—15 cm longis; foliorum laminis tenuibus 14—15 cm longis, subhastatis labiis nunc acutis nunc truncatis, in apice breviter acuminatis, petiolis circiter 10 cm longis elatis, marginibus crenato-serrulatis, paginis ambabus glabris; floribus 3—6 in verticillastris bracteis violaceis rotundatis 10—15 mm diametro glanduloso-puberulis caducis subtentis, glomerulis demum inter se 1—1,5 cm distantibus in spicis interruptis 20—25 cm longis dispositis; calycibus florentibus 17—18 mm longis extus glanduloso-pubescentibus, in maturitate 22 mm longis.

pedicellis 10—12 mm longis elatis; corollarum albo-rosearum tubo circiter 30 mm longo, labia superiore 12—13 mm alta, inferiore subaequilonga, paulo breviore.

Mexico: ? Michoacan vel Guerrero.

73. Sect. Leonuroideae.

Salvia sect. *Calosphace* subsect. *Longiflorae Leonuroideae* Benth. in DC., Prodr. 12, 327, 1848 per species quatuor constituta est; species typica est *S. leonuroides* (*S. formosa*).

Suffrutices ut videtur foliis anguste ovatis coriaceis plus minusve discoloribus; floribus in foliorum axillis dispositis; calycum firmorum labiis obtusis, superiore 7-venia; corollarum coccinearum vel purpurearum tubo tubiformi sub labia inferiore plus minusve ventricoso intus in basi papillis binis retrorsis ornato, labia inferiore longiore; staminibus in labia superiore galeata inclusis, gubernaculo integro; stylo piloso. Planta peruvianae.

Corollae purpureae dictae; calyces extus pilis ramosis brevibus sparse pubescentes . . . 399. *S. plumosa*

Corollae coccineae; calyces extus pilis simplicibus minute hirtelli . . . . 400. *S. formosa*

399. **S. plumosa** R. et P., Fl. peruv. 1, 26, t. 37, 1798 per specim. in Peruviae prov. Junin prope Tarma in praeruptis imis locis ad Huasahuasi a Dombey (no. 270) lectum constituta est; specim. verum in herb. Mus. Par. vidi.

Suffrutex ut videtur ramulis rufo-tomentosis; foliorum laminis 5—10 cm longis, 2—3 cm latis, ovato-lanceolatis, acutis, in basi pulchre rotundatis, petiolis rufo-tomentellis 8—20 mm longis elatis, margine serrulato, pagina superiore subglabra, inferiore rufotomentella; floribus 6 in foliorum axillis, pedicellis demum 2 ad 2,5 cm longis elatis; calycibus florentibus extus pilis ramosis brevibus sparse pubescentibus 20—22 mm longis, in maturitate paulo auctis labiis obtusis; corollarum (?) purpurearum tubo 35 mm longo sub labia inferiore ventricoso, intus 8 mm supra basim papillis duabus retrorsis ornato; labia superiore 12 mm alta, inferiore 15 mm longa.

Peruvia: ad Huasa-huasi prope Tarma.

400. **S. formosa** L'Hérit., Stirp. 1, 41, t. 21, 1785 per specim. in Peruvia a Dombey lectum constituta est; typum in herb. Mus. Paris. vidi. — *S. leonuroides* Glox., Obs. bot. 15, t. 2, 1785 per specim. hort. e seminibus peruvianis a Dombey lectis constituta est; typum non vidi. — *S. nodosa* R. et P., Fl. peruv. 1, 25, t. 41, 1798 per specim. in Peruviae prov. Huanuco prope Huanuco in arenosis argillaceis petrosisque a Ruiz et Pavon lectum constituta est; specim. certum in herb. Mus. Berolin. vidi. — *Jungia*

formosa Moench, Method., Suppl. 140. 1802 per *S. formosum* L'Hérit., l. c., constituta est. — *S. pyrifolia* Dombey ex Cav., Descr. 13, 1827 (nomen).

Suffrutex altitudine ad 1.5 m, ramis virgatis foliosis superne glanduloso-puberulis mox glabris; foliorum laminis subcoriaceis 2,5—8 cm longis, 2,5—8 cm latis, nunc deltoideo-ovatis etiam subrotundatis nunc ovatis, in apice semper obtusis vel rotundatis, in basi rotundatis et subcordatis, margine subintegro leniter serrulato, pagina superiore glabra, inferiore incano-tomentella, praesertim juvenilium reticulato-venulosis, petiolis 1—3 cm longis elatis; floribus 3—6 in foliorum axillis dispositis; calycibus florentibus circiter 2 cm longis, campanulatis extus minute hirtellis glabratis, in maturitate 2,5 cm longis, labiis 10 mm longis obtusis vel breviter acuminatis, inferiore laciniis infra medium connatis, pedicellis ad 1 cm longis elatis; corollarum coccinearum tubo 23 mm longo sub labia inferiore ventricoso intus 3 mm supra basim papillis binis retrorsis ornato, labia superiore 15 mm alta, inferiore 15 mm longa.

Peruvia: prope Chillo: in praeruptis ad Ambo, 7000 ped.; in collibus aridis prope Huanuco, 6000—8000 ped.: ad Tarma et Janja.

74. Sect. Skeptostachys.

Subsect. *Skeptostachys* Epl. in Rep. Spec. Nov., Beiheft 85, 111, 1936; species typica est *S. Regnelliana*.

Suffrutex foliis sat magnis supremis rotundatis; floribus in foliorum supremorum et in bractearum perstatarum rotundatarum axillis dispositis; calycum labia superiore 5-venia; corollarum tubo gradatim ampliato, in basi leniter flexuoso, intus nudo, labiis subaequilongis; staminibus ad fauces positis in labia superiore galeata inclusis, gubernaculo in dentem parvum dilato; stylo fere glabro. Species una brasiliana: *S. Regnelliana*.

401. **S. Regnelliana** Briq. in Archiv. Bot. 2, no. 10, 3, 1904 per specim. in Brasiliae prov. Rio Grande do Sul ad Silveira Martins, Arroyo Grande, in pascuis a Lindman (no. 1261) lectum constituta est; typum in herb. Mus. Stockh. vidi.

Suffrutex pulcher altitudine ad 1 m, ramis ascendentibus pubescentibus; foliorum laminis late ovatis 4—12 cm longis, 3—8,5 cm latis, leniter acuminatis, supremis rotundatis in basi rotundato-subcordatis, infimis in basi angustatis, petiolis 8—25 mm longis elatis, paginis ambabus viridibus sparse pubescentibus et glandulis sessilibus perlucidis subnitidis, margine crenato-serrato; floribus 1—3 in verticillastris bracteis subfoliosis perstatis subtentis, saepe in foliorum supre-

morum axillis dispositis (vel ? bracteis parvis deciduis subtentis) glomerulis demum inter se 1—3,5 cm distantibus in spicis interruptis glanduloso-pubescentibus 10—35 cm longis dispositis; calycibus florentibus 12—14 mm longis extus pilis brevibus extensis subglandulosis pubescentibus intus purpureis hispidulis, pedicellis 4—6 mm longis elatis, in maturitate 16—17 mm longis, labia superiore rotundata mucronata interdum acuta, inferioris laciniis paulo longioribus ad medium et ultra connatis acutis; corollarum tubo 27—30 mm longo intus nudo, labia superiore 13—14 mm alta, inferiore subaequilonga.

Brasilia: Rio Grande do Sul: ad Silveira Martins, Arroyo Grande in pascuis; ad Pinhal prope Sta. Maria in campis humidis in ripis paludum etc.; (?) Parana: prope Calmon ad marginem silvae primaevae.

75. Sect. **Asperifoliae.**

Subsect. *Asperifoliae* Epl. in Rep. Spec. Nov., Beiheft 85, 111. 1936. — Species typica est *S. scabrida*.

Herbae perennes, caulibus paucis ascendentibus subsimplicibus, foliis scabris oblongo-ellipticis; caeterum a *Nobilibus* vix differunt. Species una brasiliana: *S. scabrida*.

402. **S. scabrida** Pohl. Pl. Brasil. Ic. 2, 140, t. 195. 1831 per specim. in Brasiliae prov. Minas Geraes in pascuis graminosis prope Barbacena et Registo Velho (et in Goyaz ad S. Luzia) a Pohl lectum constituta est; typum in herb. Mus. Vindob. vidi.— *S. asperifolia* Benth., Lab. Gen. et Sp. 281, 1833 et in DC., Prodr. 12, 324, 1848 per specim. in Brasilia a Sellow (no. 1010) lectum constituta est; typum in herb. Mus. Berol., isotypos in herb. Kew. et Gray. vidi. — *S. desertorum* Schmidt in Mart., Fl. Brasil. 8, 189, 1858 (nomen).

Herba perennis altitudine ad 1 m, caulibus paucis ascendentibus virgatis scabro-hispidulis; foliorum laminis 6—13 cm longis, 2—6 cm latis, coriaceis, saepius oblongis frequenter ellipticis infimis interdum obovatis, in apice nunc obtusis nunc rotundatis, in basi ad petiolum 3—5 mm longum angustatis, interdum praesertim inferiorum rotundatis, margine crenato, pagina superiore aspera hispida rarius subglabra, inferiore venosa, nunc fere glabra nunc aspero-hispida; floribus 1—3 in verticillastris bracteis 6 ad 12 mm longis ovatis ciliolatis caducis subtentis, glomerulis demum inter se 1—5 cm distantibus in spicis interruptis laxis virgatis 20—30 cm longis dispositis; calycibus florentibus extus hispidulis 11—12 mm longis, in maturitate ad 15 mm longis, labia superiore leniter acuminata, inferiore laciniis brevioribus infra medium

connatis, pedicellis 3—4 mm longis elatis; corollarum tubo intus nudo 25—30 mm longo, labia superiore 10—18 mm alta inferiore breviore.

Brasilia: Goyaz: ad Santa Luzia; Sierra d'Abadia; Matto Grosso: Cuyaba; São Paulo: Campinas; Pauso Alegre; Araraquara; Jundiahy; Campinas; Minas Geraes: Caldas ad rivulum campi; Uberava, in Serra de Caldas in fruticeto uliginoso; Capivary in loco humido aprico; Padre Anastasio; Villa Congonhas da Serra; ad ripas fluminis Para; Congonhas do Campo; Lagoa Santa; in campis ad Contendas; Barbacena et Registo Velho.

76. Sect. **Hoehneana.**

Subsect. *Hoehneana* Epl. in Rep. Spec. Nov., Beiheft **85**, 99, 1935: species typica est *S. altissima*.

Herbae perennes speciosae foliis sat amplis ovatis; floribus 3—6 in verticillastris bracteis modo perstatis vel tarde deciduis modo caducis subtentis, in spicis interruptis elongatis dispositis; calycum labia superiore 5—9-venia; corollarum coccinearum tubo crasso ventricoso ad basim subtus valde invaginato intus caeterum nudo, labia inferiore quam superior paulo breviore patente; staminibus in labia superiore galeata inclusis; stylo piloso. Plantae brasilianae.

Folia in basi rotundato-angustata . . . . 404. *S. altissima*
Folia in basi rotundato-cordata . . . . . 403. *S. grewiaefolia*

403. **S. grewiaefolia** S. Moore in Journal Bot. **42**, 109, 1904 per specim. in Brasiliae prov. Matto Grosso prope Santa Anna da Chapada a Robert (no. 460) lectum constituta est; typum in herb. Mus. Brit., isotypum in herb. Mus. Berolin. vidi.

Herba perennis altitudine 50—60 cm, caulibus e caudice lignoso viscido-irrasis; foliorum laminis 5—10 cm longis, 3,5—6 cm latis, ovatis vel rotundato-cordatis, breviter acuminatis, in basi rotundato-cordatis, petiolis 8—25 mm longis glandulosis sat crassis elatis, margine serrato-crenato, paginis ambabus molliter glanduloso-hirsutis; floribus tribus in verticillastris, bracteis ovatis perstatis vel tarde deciduis acuminatis glandulosis 5—15 mm longis subtentis, glomerulis demum inter se 2—3 cm distantibus in spicis interruptis 15—25 cm longis dispositis; calycibus florentibus 9—15 mm longis extus pilis extensis glandulosis vestitis, in maturitate 13—16 mm longis, pedicellis 4—6 mm longis elatis; corollarum tubo 14—20 mm longo valde ventricoso, labia superiore 9—14 mm alta, inferiore subaequilonga.

Brasilia: Matto Grosso: prope Santa Anna da Chapada in cerrado sat denso nec non in margine Capoeira et in campo arenoso

fluminis vexato ad oram silvae; Cuyaba da Largal Jacobina Caceres. — Bolivia: El Oriente: prope Santiago.

404. **S. altissima** Pohl in Pl. Bras. Ic. 2, 140, tab. 191. 1831 per specim. in Brasiliae prov. Rio Janeiro in dumetis circa Santa Rita a Pohl (no. 1718) lectum constituta est; typum in herb. Mus. Vindob. vidi.

Herba perennis ut videtur altitudine ad 2 m, caulibus superne glanduloso-puberulis; foliorum laminis sat tenuibus 6—10 cm longis, ad medium 3—5 cm latis, ovato-ellipticis, obtusis vel breviter acuminatis, in basi angustatis, margine serrulato, pagina superiore, minute hirtella fere glabra, inferiore cinerea, minute hirtella, petiolis puberulis 2—4 cm longis elatis; floribus 3—6 in verticillastris bracteis caducis non visis subtentis, glomerulis inter se 1—3 cm distantibus in paniculis amplis glanduloso-puberulis dispositis; calycibus florentibus 13—15 mm longis, extus pilis brevibus extensis glandulosis sparse conspersis, labia superiore rotundato-acuminata, inferiore laciniis acuminatis aequilongis, pedicellis 3—4 mm longis elatis; corollarum tubo 16—18 mm longo amplo ad basim invaginato, labia superiore 13—15 mm alta, inferiore aequilonga.

Brasilia: Rio Janeiro: in dumetis circa Santa Rita.

77. Sect. Leucocephalae.

Subsect. *Leucocephalae* Epl. in Rep. Spec. Nov., Beiheft 85, 88, 1935; species typica est *S. leucocephala*.

Frutices pilis ramosis plus minusve incani foliis rotundato-cordatis; floribus 6—12 in verticillastris bracteis orbiculatis deciduis subtentis in spicis interruptis crassis dispositis; calycum labia superiore 7-venia rotundata; corollarum rubro-purpurearum tubo subcylindrato vix ventricoso intus nudo, labiis subaequilongis; staminibus in labia superiore inclusis, jugo ad medium connexo, gubernaculo in dentem retrorsum acutum dilatato; stylo piloso. Species una ecuadorensis: *S. leucocephala*.

405. **S. leucocephala** Kunth in Humboldt et Bonpland, Voy., Nov. Gen. et Sp. Pl. 2, 302, t. 156, 1817 per specim. in Ecuador prov. Chimborazo prope pagum Alausi a Humboldt et Bonpland (no. 3239) lectum constituta est; typum in herb. Mus. Par. vidi.

Frutex speciosus elegans altitudine ad 5 m, ramulis pilis flocoso-ramosis dense albo-tomentosis, mox glabris; foliorum laminis 3—9 cm longis, 2,5—6 cm latis, late ovatis, in apice nunc obtusis nunc acutiusculis, in basi nunc cordatis nunc rotundatis, petiolis 0,5—1 cm longis elatis, pagina superiore viride hirtella, inferiore pilis ramosis nunc dense albo-tomentosa vel albo-lanata nunc fere glabra, margine crenato-serrata; floribus 6—12 in

verticillastris bracteis orbiculatis breviter acuminatis tomentosis 6—12 mm diametro deciduis subtentis, glomerulis in spicas speciosas 5—20 cm longas confertis; calycibus florentibus pilis floccoso-ramosis extus albo-tomentosis 12—20 mm longis, in maturitate 15—30 mm longis, labiis obtusis, superiore 4—4,5 mm longa, inferiore dimidia parte breviore; corollarum rubro-purpurearum tubo 20—28 mm longo sat crasso subcylindrato intus nudo sub labia inferiore constricto, labia superiore 12—15 mm alta, inferiore paulo breviore.

Ecuador: in silvis Pangor; in declivibus siccis prope Alausi et Huataxi, 9000 ped.; ad Hacienda de Licay prope Huigra, 5000—5500 ped.

78. Sect. **Tuberosae.**

Subsect. *Tuberosae* Epl. in Rep. Spec. Nov., Beiheft **85**, 99, 1935; species typica est *S. oxyphora*.

Herbae perennes radicibus tuberiferis, caulibus gracilibus simplicibus foliis amplis elliptico-lanceolatis glabris; floribus saepius 3 in verticillastris bracteis deciduis subtentis, in spicis interruptis dispositis; calycum labia superiore 5—7-venia rotundato-mucronata; corollarum coccinearum tubo crasso intus ad basim lateraliter impresso-saccato, labia inferiore quam superior breviore; staminibus in labia superiore galeata inclusis ad fauces positis; stylo piloso. Plantae bolivianae. Species una *S. oxyphora*.

406. **S. oxyphora** Briq. in Bull. Herb. Boiss. **4**, 864, 1896 per specim. in Boliviae prov.? Santa Cruz ad Rio Juntas a Kuntze lectum constituta est; typum in herb. Delessert. vidi.

Herba perennis altitudine 50—60 cm, radicibus tuberiferis, caulibus gracilibus subsimplicibus pubescentibus; foliorum laminis 10—23 cm longis, 3—6,5 cm latis, elliptico-lanceolatis, leniter acuminatis, in basi angustatis, acutis, margine serrato, pagina superiore laete viridi, glabra nisi sparse minute hirtella, inferiore pallidiore minute crispo-puberula, petiolis 2—6 cm longis elatis; floribus circiter tribus in verticillastris bracteis rotundato-ovatis 10—18 mm longis ciliatis subglabris acuminatis deciduis subtentis, glomerulis inter se 1—1,5 cm distantibus in spicis interruptis pubescentibus 15—25 cm longis dispositis; calycibus florentibus extus fere glabris minutissime hirtellis 10—12 mm longis, in maturitate 14—15 mm longis, labiis 4,5 mm longis hiantibus, superiore mucronata, inferiore laciniis acutis infra medium connatis, pedicellis 4 mm longis elatis; corollarum tubo crasso, 28 ad 33 mm longo subventricoso ad basim plus minusve constricto intus papillis binis ornato, labia superiore 9 mm alta, inferiore paulo breviore.

Bolivia: Rio Juntas, 1200 m; in valle Yungas ad Polo-polo prope Coroico, 1100 m; ad Rio Coroico; ad Rio Tapacani, Santa Cruz, 400 m.

79. Sect. Longiflorae.

Salvia sect. *Calosphace* subsect. *Longiflorae* (partim) Benth., Lab. Gen. et Sp. 276, 1833 per species numerosas constituta est; *S. longiflora* (*S. Dombei*) est species typica.

Frutices foliis amplis ovatis vel cordatis (*S. lachnostomatis* et *S. Weberbaueri* elliptico-lanceolatis) plus minusve villosis; floribus 3—6 in verticillastris bracteis deciduis rarius (*S. vestita*) perstatis subtentis in spicis interruptis dispositis; calycum labia superiore irregulariter 7-venia nunc rotundata nunc acuminata; corollarum coccinearum vel rubro-purpurearum interdum violacearum tubo 30—90 mm longo tubiformi. superne gradatim ampliato, interdum sub labia inferiore leniter ventricoso intus nudo (*S. scandens* excepta), labiis subaequilongis; staminibus in labiam superiorem galeatam inclusis, gubernaculo integro vel in dentem obscurum dilatato; stylo glabro (*S. Weberbaueri* excepta). Plantae boliviano-peruvianae a nobilibus nisi foliis latioribus et stylo glabro vix differunt.

Folia lanceolata vel elliptico-lanceolata
 Calycum stomata purpureo-lanata . . . 412. *S. lachnostoma*
 Calycum stomata nuda . . . . 413. *S. Weberbaueri*
Folia ovata vel cordata; calycum stomata modo lanata
Corollarum tubi 80—90 mm longi . . . . 410. *S. Dombeyi*
Corollarum tubi 30—50 mm longi
 Corollarum tubi ad basim lateraliter leniter bisaccati et intus papillis imperfecte annulati . . . . 411. *S. scandens*
 Corollarum tubi intus nudi
  Calyces florentes 22—26 mm longi labia superiore acuta . . . . 409. *S. acuminata*
  Calyces florentes 11—17 mm longi labia superiore rotundata
   Corollarum tubi 30—35 mm longi; staminum juga 17 mm longa . . . . 406. *S. tubulosa*
   Corollarum tubi 50—52 mm longi; staminum juga 25—26 mm longa . . 407. *S. vestita*

407. **S. vestita** Benth. in DC., Prodr. **12**, 346, 1848 per specim. in Colombia (? Peruvia) a Lobb lectum constituta est; typum in herb. Kew., isotypum in herb. Univ. Calif. (Los Angeles) vidi.

Frutex ut videtur ramis dense hirsuto-villosis, pilis 2—3 mm longis in siccis ferrugineis; foliorum laminis 5—7 cm longis, 4,5—6 cm latis, cordatis, subacutis, margine serrato-crenato, paginis ambabus dense hirsuto-villosis, petiolis 2—4 cm longis elatis; floribus tribus in verticillastris bracteis rotundatis 15—20 mm diametro breviter acuminatis dense hirsuto-villosis (? omnino) perstatis subtentis, glomerulis demum inter se 1,5—3 cm distantibus; calycibus florentibus 16—17 mm longis, extus hirsuto-villosis, labia superiore rotundata mucronata, inferiore laciniis breviter acuminatis infra medium connatis, in maturitate non visis; corollarum tubo 50—52 mm longo, cylindrato, intus nudo, labia superiore 15 mm alta, inferiore subaequilonga.

(?) Colombia (Peruvia): sine loco.

408. **S. tubulosa** Epl. in Rep. Spec. Nov., Beiheft 85, 115, 1936 per specim. in Peruviae prov. Huanuco in montibus prope Pozuzo, a Pearce (no. 261) lectum constituta est; typum in herb. Kew. vidi.

Frutex sempervirens altitudine ad 2 m ramis villosis; foliorum laminis 7—13 cm longis, 4—8 cm latis, late ovatis breviter acuminatis, in basi anguste subcordatis, margine leniter serrulato, pagina superiore glabra, inferiore hirsuto-villosa; floribus 3—6 in verticillastris bracteis ovato-caudatis extus dense villosis caducis 2—2,5 cm longis subtentis, glomerulis demum inter se ad 1 cm distantibus; calycibus florentibus 11—12 mm longis extus ad basim villosis, labia superiore rotundata, inferiore laciniis acutis infra medium connatis, in maturitate non visis; corollarum tubo 30—35 mm longo cylindrato intus nudo, labia superiore 10 ad 12 mm alta, inferiore subaequilonga.

Peruvia: Huanuco: in montibus prope Pozuzo, 2600 m.

409. **S. acuminata** R. et P., Fl. peruv. 1. 24, t. 37, 1798 per specim. in Peruviae prov. Lima in praeruptis ad Pillao et Canta a Ruiz et Pavon lectum constituta est; specim. certa in herb. Berolin. et Boiss. vidi.

Frutex interdum scandens altitudine ad 3 m, ramulis glanduloso-puberulis et sparse villosis; foliorum laminis 10—15 cm longis, 6—8 cm latis, cordatis, nunc acutis nunc breviter acuminatis, margine supra medium fere recte serrulato, paginis ambabus sparse scabrido-villosis, petiolis glanduloso-puberulis et villosis 3—5 cm longis elatis; floribus circiter 6 in verticillastris bracteis membranaceis obovatis breviter acuminatis deciduis 1—2 cm longis ciliatis sparse villosis subtentis, glomerulis demum inter se 2—4 cm distantibus, in paniculis sat amplis glanduloso-villosis dispositis; pedicellis ad 2,5 cm longis elatis; calycibus florentibus 22—26 mm longis tubulosis extus pilis extensis et brevioribus glandulosis sparse

vestitis, in maturitate ad 3 cm longis, labiis acutissimis 8—9 mm longis, inferiore laciniis fere ad apices connatis; corollarum tubo 47—50 mm longo intus nudo, labia superiore 12—15 mm alta, inferiore subaequilonga.

Peruvia: Huanuco: in valle Huallaga prope Chagalla 2800 ad 2900 m; ad Tambo de Vaca prope Muna, 8000 ped.; Yanano, 6000 ped.

410. **S. Dombeyi** Epling nom. nov. per specim. idem constituta est. — *S. longiflora* R. et P., Fl. peruv. 1, 23, t. 10, 1798 per specim. in Peruviae prov. Junin in praeruptis profundis Tarmae ad Huichay praedium a Dombey lectum constituta est: specim. certa in herb. Mus. Par. et Boiss. vidi (non Willd., Sp. Pl. 1. 141, 1797).

Frutex sempervirens speciosus altitudine ad 2 m. ramulis piloso-hirsutis, pilis 2—3 mm longis; foliorum laminis 8—20 cm longis, 3—12 cm latis, tenuibus, anguste ovatis, longe leniterque acuminatis, in basi subcordatis, margine fere recto, crenato-serrato, paginis ambabus praesertim inferiore ad venas sparse piloso-hirsutis, petiolis 2—6 cm longis elatis; floribus 3—6 in verticillastris bracteis membranaceis ovatis acuminatis glabris caducis 15—20 mm longis subtentis, glomerulis demum inter se 1—2 cm distantibus in spicis interruptis 10—20 cm longis speciosissimis dispositis; calycibus florentibus extus glabris purpureis circiter 4 cm longis late cylindratis, labiis acutis 1,5 cm longis, inferiore laciniis fere ad apices connatis, in maturitate vix auctis, pedicellis gracillimis 1—3 cm longis elatis; corollarum tubo cylindrato 80—90 mm longo, sub labia superiore leniter constricto, intus nudo, labia superiore 25 mm alta, inferiore paulo breviore.

Peruvia: Ollantaytambo, 3000 m; ad Cuzco. 11380 ped. — Bolivia: Sorata in valle fluminis Challasungo.

411. **S. scandens** Epl. in Rep. Spec. Nov., Beiheft 85, 116, 1936 per specim. in Peruviae prov. Cuzco prope Marcapata a Weberbauer (no. 7796) lectum constituta est; typum in herb. Mus. Field., isotypum in herb. Univ. Calif. vidi.

Frutex scandens ramulis villosis ut videtur rufis; foliorum laminis sat magnis tenuibus, 8—16 cm longis, 5—8 cm latis, ovatis, supra medium acuminatis, in basi nunc rotundatis, pagina superiore hirtella, inferiore subtomentosa, marginibus convexioribus acute serratis, crenis apiculato-acuminatis, petiolis 3—5 cm longis villosis elatis; floribus in racemis rufo-villosis 15—25 cm longis, circiter sex in bractearum caducarum axillis dispositis, verticillastris inter se 1,5—4 cm distantibus, pedicellis 4—8 mm longis elatis; calycum florentium submembranaceorum tubo 12—13 mm longo, extus ad venas pilis ad 3 mm longis sparse vestito, labia superiore 5 mm longa, inferiore subaequilonga, ambabus breviter acuminatis;

corollarum caeruleo-purpurearum tubo piloso 4,2—4,5 cm longo, intus 3,5 mm supra basim lateraliter leniter bisaccato. 6 mm supra basim papillis imperfecte annulato, labia superiore 13—18 mm alta, inferiore subaequilonga; styli glabri ramo inferiore crassiore plano in apice truncato 2 mm longo, superiore 6.5 mm longo acutissimo canaliculato.

Peruvia: Cuzco: prov. Quispicanchi prope Marcapata, 2900 m (Bushwood, consisting of high shrubs and small trees with many hard leafed types).

412. **S. lachnostoma** Epl. in Rep. Spec. Nov., Beiheft 85, 117, 1936 per specim. in Peruvia prope Playapampa a Macbride (no. 4478) lectum constituta est; typum in herb. Mus. Field., isotypum in herb. horti bot. Missour. vidi.

Frutex diffusus gracilis suaveolens altitudine ad 2 m. ramis purpureo-villosulis; foliorum laminis 5—10 cm longis, 1.5—3 cm latis, lanceolatis, longe leniterque acuminatis, in basi rotundato-angustatis, petiolis villosulis 5—15 mm longis elatis. margine serrulato, paginis ambabus sparse villosulis; floribus 3—6 in verticillastris bracteis ovato-lanceolatis 4—6 mm longis hirsutis caducis subtentis, glomerulis demum inter se 1—3 cm distantibus in paniculis purpureis villosulis dispositis; calycibus florentibus extus ad venas sparse glanduloso-villosis pulchre purpureis, ore purpureo-lanato, 8—10 mm longis, in maturitate paulo auctis, labiis acutis hiantibus; corollarum purpureo-rubrarum tubo 28—32 mm longo, intus nudo superne gradatim ampliato, labia superiore 10—11 mm alta, inferiore paulo breviore.

Peruvia: in fruticetis prope Muna ad viam ad Tambo de Vaca, 8000 ped.; Playapampa in montana, 9000 ped.

413. **S. Weberbaueri** Epl. in Rep. Spec. Nov., Beiheft 85, 151, 1936 per specim. in Peruvia ad flumen Mesamerich a Weberbauer (no. 6638) lectum constituta est: typum in herb. Field Mus., isotypum mancum in herb. Smithson. vidi.

Frutex ramis gracilibus pubescentibus; foliorum laminis tenuibus elliptico-lanceolatis 10—20 cm longis, 3.5—5 cm latis, in apice acuminatis, in basi rotundato-angustatis, marginibus serrulatis, paginis ambabus hirtellis, petiolis 1—2,5 cm longis elatis; floribus in spicis interruptis laxis gracilibus brevibus in foliorum supremorum axillis dispositis, verticillastris sub-6-floris; calycibus florentibus 10 mm longis sparse villosis in maturitate 15 mm longis sat tenuibus; labia superiore 7-venia, ambabus acuminatis, pedicellis gracilibus 8—9 mm longis elatis; corollarum tubo 35 mm longo intus nudo superne gradatim ampliato, labia superiore 12—13 mm alta, inferiore paulo longiore.

Peruvia: ad flumen Masamerich, 3200—3300 m.

80. Sect. **Brandegeia.**

Herbae bellae perennes caulibus ut videtur pluribus plus minusve procumbentibus vel fruticuli pilis longioribus setaceis extensis saepius (*S. oresbia* excepta) ornatis; foliorum laminis nunc sessilibus nunc graciliter petiolatis ovatis vel deltoideo-ovatis glabris nisi ad margines pilis setaceis ciliatis; floribus nunc oppositis nunc tribus in verticillastris dispositis in racemis instructis bracteis caducis vel perstatis subtentis; calycibus glabris nisi pilis setaceis praesertim ad venas conspersis, labia superiore (5 (—7)-venia, in maturitate auctis praesertim latioribus saepe pulchre vinaceis; corollarum tubo ventricoso ad basim patenter constricto, labia inferiore late patente quam superior longiore; stylo utrimque plus minusve villoso: gynobasi quam nuculae longiore. Plantae centrali-mexicanae quarum *S. sessilifolia* est species typica.

Calyces, folia et caules pilis setaceis longioribus glandulosis plus minusve conspersi
  Folia sessilia . . . . 416. *S. angustiarum*
  Folia graciliter petiolata . . . . . . 414. *S. blepharophylla*
Calyces et folia glabrata; caules pilis brevibus pubescentes . . . . 415. *S. oresbia*

414. S. blepharophylla Brandegee ined. per specim. in Mexico prov. San Luis Potosi verisimiliter ad Minas de San Rafael a Purpus (no. 4950) lectum constituta est; typum in herb. Univ. Calif. (Berkeley) vidi.

Herba bella perennis caulibus ut videtur pluribus plus minusve procumbentibus 15—40 cm longis, infime pilis brevibus curvatis lineato-pubescentibus, superne pilis brevibus extensis plus minusve glandulosis utrimque ad angulos pilis 1,5—2 mm longis glandulosis setaceis extensis conspersis; foliorum laminis 2,5—5 cm longis, anguste ovatis frequenter subdeltoideis, in apice obtusis, in basi ad petiolos graciles 1—2 cm longos plus minusve angustatis, interdum subtruncatis, marginibus leniter serratis et pilis longioribus ciliatis, paginis caeterum glabris; floribus oppositis in racemis 5—12 cm longis dispositis bracteis caducis subtentis; calycibus florentibus 12—14 mm longis ad venas pilis longioribus setaceis glandulosis sparse ornatis caeterum glabris, in maturitate paulo auctis latioribus; corollarum tubo 18—19 mm longo, ad basim valde invaginato, labia superiore 10 mm alta, inferiore paulo longiore; staminum jugis 13—14 mm longis.

Mexico: San Luis Potosi: Minas de San Rafael; Bagre.

415. **S. oresbia** Fern. in Proc. Am. Acad. **35**, 536, 1900 per specim. in Mexico prov. San Luis Potosi in montibus ad San Rafael a Schaffner (no. 666, 333) lectum constituta est; typum in herb. Gray., isotypos in herb. Goett., Smithson., Acad. Sc. Philad., et horti bot. Nov. Eborac. vidi.

Herba bella perennis vel fruticulus, caulibus ut videtur pluribus plus minusve procumbentibus 15—40 cm longis, infime pilis brevibus plus minusve recurvis lineato-pubescentibus, superne pilis brevibus extensis glandulosis; foliorum laminis 1,5—2,5 cm longis, ovatis etiam subrotundis, in apice acutiusculis interdum obtusis, in basi ad petiolos graciles ad 1 cm longos rotundato-angustatis, marginibus convexioribus subserrulatis, paginis glabris; floribus plerumque tribus in verticillastris bracteis caducis subtentis in racemis 5—15 cm longis confertioribus dispositis: calycibus florentibus 10—16 mm longis extus glabris in maturitate auctis praesertim latioribus: corollarum tubo 14—16 mm longo, ad basim leniter invaginato, labia superiore 8 mm alta, inferiore longiore; staminum jugis 11 mm longis; stylo fere glabro.

San Luis Potosi: ad urbem; San Rafael, Sierra de San Miguelito, 2100—2300 m.

416. **S. angustiarum** Epling nom. nov. — *S. sessilifolia* Gray ex Wats. in Proc. Am. Acad. **22**, 445, 1887 per specim. in Mexico prov. Jalisco prope Rio Blanco a Palmer (no. 184) lectum constituta est; typum in herb. Gray., isotypos plures vidi (non Baker 1881).

Herba perennis caulibus ut videtur pluribus ascendentibus verisimiliter debilibus altitudine 60 cm et ultra superne debiliter ramosis, ad basim pilis extensis plus minusve glandulosis hirsutis superne pilis 1,5—2 mm longis extensis glandulosis setaceis conspicue ornatis caeterum glabris nisi inter flores breviter glandulosis, internodiis elongatis; foliorum laminis sessilibus saepius deltoideo-ovatis interdum angustatis, 2,5—5,5 cm longis, 1—3,5 cm latis, interdum minoribus, in apice obtusis, in basi rotundato-truncatis etiam cordatis, marginibus crenato-serratis et pilis longioribus setaceis ornatis paginis caeterum glabris, superiore nitida; floribus 1—3 in verticillastris bracteis parvis perstatis subtentis, in racemis laxioribus plerumque 15—30 cm longis dispositis; calycibus florentibus 12—14 mm longis extus pilis longioribus setaceis glandulosis conspersis caeterum glabris, in maturitate auctis latioribus; corollarum tubo 14—15 mm longo, valde ventricoso et in basi invaginato, labia superiore 10—11 mm alta, inferiore duplo longiore latissima; staminum jugis 13 ad 14 mm longis.

Mexico: Jalisco: in angustiis ad Rio Blanco; in angustiis prope Guadalajara.

81. Sect. Pruinosae.

Frutices ut videtur ramulis foliis et floribus pilis minutissimis ramosis pruinosis; foliis ovatis discoloribus sat amplis; floribus plerumque tribus in verticillastris bracteis caducis subtentis in spicis laxis confertis; calycum labia superiore in basi 3-venia, venis incrassatis superne tenuibus ramosis reticulatis, in maturitate paulo auctis latioribus; corollarum rubro-purpurearum tubo sat ventricoso intus nudo, labia superiore galeata, inferiore paulo breviore, labia media parva; staminibus in faucibus positis, ut videtur e galea 2—3 mm exsertis, gubernaculo infra connexum in dentem acutum producto; stylo piloso.

Species una Mexicanorum . . . . *S. Rosei*

417. **S. Rosei** Fern. in Proc. Am. Acad. **35**, 548, 1900 per specimen in Mexico prov. Jalisco inter Colotlan et Bolaños a Rose (no. 2844) lectum constituta est; typum in herb. Gray., isotypum in herb. Smithson. vidi.

Frutex ut videtur ramulis pilis minutis ramosis pruinosis; foliorum laminis mollibus ovatis 3—6 cm longis obtusis in basi rotundatis, petiolis 5—1,5 cm longis elatis, pagina superiore subglabra, inferiore pilis minutis ramosis incana, marginibus crenato-serratis; floribus 1—3 in verticillastris bracteis caducis subtentis, in spicis gracilibus 10—15 cm longis dispositis; calycibus florentibus 12—15 mm longis, pilis minutis ramosis cinereis, labia superiore 3-venia, venis in basi incrassatis, in maturitate 18—19 mm longis; corollarum purpurearum tubo sat amplo subventricoso 19—20 mm longo, labia superiore 11 mm longa, inferiore breviore; staminibus e galea 2—3 mm exsertis; stylo piloso; gynobasis cornu ovarium paulo superante.

Mexico: Jalisco: inter Colotlan et Bolaños.

82. Sect. Palmerostachys.

Frutices ut videtur foliis ovatis vel anguste ovatis pilis ramosis parvis induti; floribus 3—6 in verticillastris bracteis caducis parvis subtentis in spicis compactis inter se 2—5 mm distantibus dispositis; calycibus extus pilis ramosis indutis, labia superiore 3-venia, venis pro rata incrassatis; corollarum caerulearum tubo intus nudo integro, labia inferiore quam superior longiore; staminibus inclusis, gubernaculo ad connexum in dentem producto; stylo piloso. Species una mexicana *S. Palmeri*.

418. **S. Palmeri** Gray in Proc. Am. Acad. **21**, 408, 1886 per specim. in Mexico prov. Chihuahua in collibus circa Frailes in

montibus ad Batopilas a Palmer (no. 259) lectum constituta est; typum in herb. Gray., isotypos in herb. Smithson., Acad. Sci. Philad. et horti bot. Nov. Eborac. vidi.

Frutex ramulis superne pilis ramosis pruinosis caeterum glabris; foliorum laminis plerumque 3—4 cm longis ovatis vel anguste ovatis, in apice acutis, in basi rotundatis, petiolis 4—5 mm longis incanis elatis, pagina superiore minute hirtella, inferiore pilis ramosis brevibus incana, marginibus subserratis; floribus 3—6 in verticillastris in spicas 3—7 cm. longas confertis; calycibus florentibus extus pilis brevibus ramosis incanis 6 mm longis, venis infra medium incrassatis: corollarum tubo 6.5—7 mm longo, labia superiore 5 mm alta.

Mexico: Chihuahua: circa Frailes in montibus ad Batopilas; Sonora: prope Ures, 1200 m.

83. Sect. **Killipiana.**

Subsect. *Killipiana* Epling in Rep. Spec. Nov., Beiheft 85, 101, 1936; species typica est *S. latens*.

Frutices foliis anguste ovatis vel ellipticis in basi angustatis etiam extenuatis breviter petiolatis; floribus saepius tribus interdum 6, rarius solitariis in verticillastris bracteis deciduis subtentis vel in foliorum axillis dispositis; calycibus extus praesertim ad venas hirtellis caeterum glabris, labiis acuminatis superiore 3-veniis, rarius sub-5-veniis; corollarum coccinearum tubo superne gradatim ampliato, intus ad basim papillis ornato nullomodo invaginato, labia superiore erecta quam inferior longiore; staminibus in galea inclusis; stylo piloso; gynobasis cornu ovarium plus minusve superante.

Plantae colombianae.

Flores in foliorum axillis dispositi . . . 420. *S. latens*

Flores in bractearum deciduarum axillis dispositi

Folia cordata; pedicelli maturi quam calyces longiores . . . . 419. *S. erythrostoma*

Folia ovata vel elliptica in basi angustata: pedicelli maturi quam calyces breviores

Calycum venae incrassatae extus hispidulo-muriculatae . . . . 422. *S. costata*

Calycum venae vix costatae extus fere glabrae laeves . . . . 421. *S. laurifolia*

419. **S. erythrostoma** Epl. in Rep. Spec. Nov., Beiheft 85, 101, 1936 per specim. in Colombiae prov. Santander prope Surata a Killip et Smith (no. 16772) lectum constituta est; typum in herb. Smithson. vidi.

Suffrutex altitudine ad 6 m, caulibus superne minutissime et dense puberulis velutinis: foliorum laminis 8—12 cm longis rotundato-cordatis, in apice abrupte breviter acuminatis, margine crenato-serrato, paginis ambabus sparse hirtellis, inferiore pallidiore glandulis perlucidis nitidis conspersa, petiolis 6—10 cm longis elatis; floribus circiter in verticillastris bracteis coccincis rotundatis 3—4 mm diametro caducis subtentis, glomerulis inter se 1—3 cm distantibus in spicis interruptis diffusis, pilis extensis brevioribus et longioribus glandulosis incanis, dispositis, pedicellis demum 8—12 mm longis elatis; calycibus florentibus non visis submaturis 8 mm longis, extus pilis extensis minutissimis et longioribus ad 2 mm longis capitato-glandulosis vestitis, labiis coccineis superiore 3-venia mucronata, inferiore paulo longiore laciniis acuminatis: corollis verisimiliter parvis et nuculis non visis.

Colombia: Santander: prope Surata, 1600—1800 m.

420. **S. latens** Benth., Pl. Hartweg. 242, 1846 per specim. in Colombiae prov. Cauca ad Popayan in silvis Hato frio prope El Salado ab Hartweg (no. 1326) lectum constituta est; typum in herb. Kew., isotypos in herb. Univ. Calif. (Los Angeles), Mus. Par., Mus. Brit., Delessert., Vindob. et Berolin. vidi.

Frutex diffusus altitudine ad 2 m et ultra, interdum ad 6 m, subscandens, ramis praecipue ad nodos et superne rufo-villosis: foliorum laminis 6—12 cm longis, 3—5 cm latis, coriaceis, rugosis, nunc oblongo- nunc ovato-ellipticis, utrimque angustatis, in apice acuminatis, in basi nunc acutis nunc acuminatis, margine serrato, pagina superiore ad venas hirtella, inferiore nunc praesertim ad venas villosula nunc glabra, junioribus patentim rufo-villosis, omnibus petiolis villosis 1—3 cm longis elatis; floribus 3—6 in foliorum supremorum axillis dispositis; calycibus florentibus extus sparse villosulis 11—12 mm longis, in maturitate 12—14 mm longis, labia superiore 3-venia et inferiore laciniis acuminatis subcaudatis 4—5 mm longis, pedicellis 4—5 mm longis villosis elatis; corollarum tubo 17—19 mm longo, intus ad basim papillis binis ornato, labia superiore 8—9 mm alta, inferiore subaequilonga.

Colombia: El Cauca: Calaguala prope Coconuco ad rivulum ad Rio San Andreas, 2500—2800 m; in silvis Hato Frio prope El Salado; prope Timbio, Popayan; Antioquia: Santa Elena.

421. **S. laurifolia** Epl. in Rep. Spec. Nov., Beiheft 85, 102, 1936 per specim. in Colombiae prov. Cundinamarca ad cataractam Tequidama ab Holton (no. 480) lectum constituta est; typum in herb. horti bot. nov. Eborac., isotypum in herb. Kew. vidi.

Frutex altitudine ad 2 m et ultra, ramis plus minusve rufo-pubescentibus interdum glabratis: foliorum laminis 6—12 cm longis, 2—6 cm latis, ovato-ellipticis, in apice longe leniterque acuminatis,

in basi ad petiolos 1—2 cm longos angustatis, margine serrulato, paginis ambabus fere glabris interdum sparse pubescentibus; floribus 2—6 in verticillastris bracteis glabratis ovato-caudatis 6—12 mm longis caducis subtentis, glomerulis inter se 5—15 mm distantibus in spicis interruptis glabratis 3—25 cm longis saepe axillaribus dispositis; calycibus florentibus 9—13 mm longis extus glabratis purpureis ad venas interdum hispidulis vel sparse hirtellis, in maturitate paulo auctis labiis ambabus acuminatis, superiore 3-venia, interdum sub-5-venis, pedicellis 3—5 mm longis elatis; corollarum tubo 15—18 mm longo, leniter ventricoso, intus ad basim 2—4 papillis ornato, labia superiore 9—13 mm alta, inferiore 7—9 mm longa.

An *S. latentis* varietas?

Colombia: Caldas: inter Salento et Laguneta in silvis, 2400 ad 2700 m; ad Pinares supra Salento in silvis, 2600—2900 m. — Cundinamarca: ad cataractam Tequendama: inter Baquia et Volcancito; inter Pasca et Sumapaz, 8000 ped.; inter Bogota et Honda; inter El Charquita et Tequendama. — Huila: in silvis Cord. orient. prope Neiva, 1800—2300 m. — Antioquia: La Sierra, Medellin, 2000 m.

422. **S. costata** Epl. in Rep. Spec. Nov., Beiheft 85, 102, 1936 per specim. in Colombiae prov. Magdalena in Sierra Nevada de Santa Marta ad Rio Hacha a Schlim (no. 792) lectum constituta est; typum in herb. Mus. Par., isotypum in herb. Kew. vidi.

Suffrutex ramis gracilibus fere glabris; foliorum laminis maximam partem 6—7 cm longis, 2,5—3,5 cm latis, ovato-ellipticis, leniter acuminatis, in basi ad petiolos 1—1,5 cm longos angustatis; margine serrulato, paginis ambabus fere glabris, venis prominulis reticulatis; floribus 1—3 in verticillastris bracteis non visis subtentis, glomerulis inter se 0,5—12 mm distantibus in spicis interruptis brevibus 2—8 cm longis in foliorum supremorum axillis dispositis; calycibus florentibus 12 mm longis, extus ad venas incrassatas costatas purpureas hispidulo-muriculatis caeterum glabris, labia superiore 3-venia, pedicellis 3 ad 4 mm longis elatis, in maturitate non visis; corollarum tubo 19 mm longo leniter ventricoso intus ad basim papillis quatuor retrorsis ornato, labia superiore 14—15 mm alta, inferiore 12 ad 13 mm longa.

An *S. laurifoliae* varietas?

Colombia: Sierra Nevada de Santa Marta ad Rio Hacha, 9000 ped.

84. Sect. Peninsulares.

Frutices vel herbae perennes pulchri foliis ovato-lanceolatis, marginibus fere rectis; floribus 6—12 in verticillastris bracteis

caducis subtentis in spicis speciosis laxis approximatis; calycum labia superiore 3—5-venia; corollarum roseo-purpurearum tubo intus nudo, ad basim valde invaginato, ad medium valde ventricoso, labia superiore galeata quam inferior paulo longiore, inferioris labia media parva; staminibus ad fauces positis in galea inclusis. connectivo integro vel dente parvo ornato; stylo pubescente.

Frutices Californiae inferioris; species typica est *S. peninsularis*.

Corollarum labiae superiores 13 mm altae;
folia minutissime tomentella . . . . . . 423. *S. Marci*
Corollarum labiae superiores 6—8 mm altae;
folia molliter pubescentia . . . . . 424. *S. peninsularis*

423. **S. Marci** Epl. in Jones, Contrib. West. Bot. 18. 52. 1933 per specim. in California inferiore prope Loreto a Jones (no. 27298) lectum constituta est; typum in herb. Univ. Calif. (Los Angeles), isotypum in herb. Coll. Pomonae vidi.

Frutex pulcher (vel herba perennis) amabilis ramulis, pilis minutis incano-tomentellis; foliorum laminis 8—10 cm longis late lanceolatis ad apices acutis gradatim angustatis. in basi rotundatis, petiolis plerumque 1—2 cm longis elatis. marginibus fere rectis serrulatis, pagina superiore pilis minutis sparse hirtella cinereo-viridi, inferiore minutissime tomentella; floribus 6—12 in verticillastris bracteis caducis subtentis, in spicis speciosis 15—30 cm longis approximatis; calycibus florentibus extus minutissime tomentellis 8—9 mm longis, labia superiore imprimis 3-venia; corollarum tubo 18—20 mm longo, labia superiore 13 mm alta.

Further knowledge of this proposed species may prove its unity with *S. peninsularis*. The present evidence is inconclusive. but the differences in pubescence and proportions of the corolla. which is more abruptly ventricose, are suggestive of specific identity.

Mexico: Baja California: Arroyo Undo Rancho, Loreto.

424. **S. peninsularis** Brandegee in Zoë 5. 108, 1901 per specim. in California inferiore prope San Pablo a Purpus lectum constituta est; typum in herb. Univ. Calif. (Berkeley) vidi.

Frutex ut videtur ramulis molliter pubescentibus cinereis: foliorum laminis anguste deltoideo-ovatis 6—12 cm longis 3—6 cm latis, ad apicem acutis gradatim angustatis, petiolis plerumque 1—2 cm longis elatis, marginibus fere rectis serrulatis; pagina superiore cinereo-hirtella, inferiore incano-pubescente; floribus maximam partem 6 in verticillastris bracteis caducis subtentis. glomerulis in spicis speciosis 15—30 cm longis approximatis; calycibus florentibus extus incano-hirtellis 8—9 mm longis. labia superiore 5-venia. tribus tamen prominulis; corollarum tubo 18 mm longo. labia superiore 6—8 mm alta.

Mexico: Baja California: San Pablo.

85. Sect. **Tubiflorae.**

Subsect. *Tubiflorae* Epl. in Rep. Spec. Nov., Beiheft **85.** 103, 1935; species typica est.

Frutices vel suffrutices foliis ovatis acuminatis in basi rotundatis et saepe angustatis; floribus 3—6 in verticillastris bracteis membranaceis vel caducis vel deciduis subtentis in spicis confertis vel interruptis dispositis; calycum labia superiore 3-venia, interdum sub-5-venia; corollarum roseo-purpurearum tubo intus nudo nullomodo nisi plantarum insulanarum invaginato, labia superiore erecta quam inferior saepius longiore, inferiore breviter trilobata staminum gubernaculo vel integro vel dente parvo ad connexum ornato: stylo piloso; gynobasis cornu ovarium nunc aequante nunc superante.

Plantae continentis.
 Corollarum labia superior 3—6 mm alta
  Plantae mexicanae . . . . 425. *S. tubifera*
  Plantae colombianae
   Folia subtus molliter pubescentia . . 432. *S. camaraefolia*
   Folia subtus glabra nisi ad venas hirtella
    Corollarum tubi 12 mm longi; folia rotundato-ovata 6—8 cm lata . 431. *S. secundiflora*
    Corollarum tubi 18 mm longi, folia in basi cuneato-angustata . . . 433. *S. venulosa*
 Corollarum labia superior 10—20 mm alta
  Corollarum labia superior 20 mm alta; plantae mexicanae . . . . 426. *S. Pringlei*
  Corollarum labia superior 10—16 mm alta: plantae andinae
   Corollarum tubi circiter 17 mm longi; folia subtus saepius glabra ad venas hirtella, venis elevatis transversis prominulis . . . . 434. *S. pseudolantana*
   Corollarum tubi 20—26 mm longi
    Folia saepius tomentosa in basi rotundata . . . . 435. *S. tortuosa*
    Folia saepius glabra in basi ad petiolos cuneato-angustata . . . . 436. *S. moschata*
Plantae jamaicenses nonnullae haitenses
 Calyces extus glabri; bractea perstata . 430. *S. clarendonensis*
 Calyces extus pubescentes vel lanati
  Plantae utrimque pilis insignibus ramosis crassis rufo-floccosae . . . . 427. *S. microdictya*
  Plantae molliter pubescentes

Petioli 1—1,5 cm longi; calyces purpureo-pubescentes . . . . 429. *S. jamaicensis*
Petioli 2,5—5 cm longi; calyces purpureo-lanati . . . . 428. *S. eriocalyx*

425. **S. tubifera** Cav., Icones 1. 16. t. 25. 1791 per specim. in horto Matrit. e seminibus mexicanis eductum constituta est; specim. verum in herb. Jussieu. vidi. — *S. longiflora* Willd., Sp. Pl. 1, 141. 1797 per *S. tubiferam* Cav., l. c., constituta est.

Herba perennis (? vel suffrutex) altitudine ignota, ramuli sparse pubescentibus: foliorum laminis late ovatis 7—12 cm longis, in apice acuminatis, in basi rotundatis et ad petiolos 3—5 cm longos frequenter abrupte cuneato-angustatis, marginibus crenatis, pagina superiore fere glabra, inferiore sparse molliterque cinereo-pubescente; floribus plerumque tribus in verticillastris in racemis 15—20 cm longis dispositis; calycibus florentibus 8 ad 11 mm longis extus pilis hirtis in basi purpureo-punctatis sparse conspersis, labiis acuminatis 3.5 mm longis in maturitate non visis: corollarum tubo 24—25 mm longo, intus nudo, labia superiore 5—6 mm alta; staminibus in galea inclusis, gubernaculo longissimo 21 mm longo: stylo utrimque piloso.

Mexico: Mexico: in valle Mexico; Hidalgo: Zimapan; Real del Monte.

426. **S. Pringlei** Robins. et Greenm. in Proc. Am. Acad. 29, 391, 1894 per specim. in Mexico prov. Jalisco in angustiis Tequila a Pringle (no. 4564) lectum constituta est; typum in herb. Gray., isotypos paucos vidi.

Suffrutex ut videtur altitudine 1—2 m, ramis minutissime hirtellis; foliorum laminis ovatis 6—8 cm longis, acuminatis, in basi rotundato-angustatis, margine crenato-serrato, paginis ambabus glabris nisi ad venas hirtellis concoloribus, petiolis 1—2 cm longis elatis; floribus in spicas 5—10 cm longas confertis; calycibus florentibus 15—16 mm longis extus ad venas hirtellis, in maturitate auctis 18 mm longis, venis in basi induratis incrassatis, labiis 6—7 mm longis, hiantibus; corollarum tubo 23—24 mm longo, intus nudo, labia superiore 20 mm alta.

Mexico: Jalisco: Tequila.

427. **S. microdictya** Urb. et Ekm., Arkiv Bot. 20 A, no. 15. 87, 1926 per specim. in Haiti in Massif de la Selle, Morne de la Selle in saxosis ab Ekman (no. 3089) lectum constituta est; typum in herb. Mus. Berol., isotypum in herb. Mus. Stockh. vidi.

Frutex altitudine circiter 2 m omnino pilis insignibus ramosis crassis rufo-floccosus; foliorum laminis ovatis 4—7 cm longis, in apice abrupte acutiusculis, in basi maximam partem rotundatis, petiolis floccosis 1—2 cm longis elatis, margini-

bus serrulatis, pagina superiore atro-viridi valde rugoso-bullata in bullis floccosa, inferiore pallidiore elevato-reticulata ad venas floccosa; floribus 6 in verticillastris bracteis caducis subtentis in spicis rubiginosis 5—10 cm longis subternatis confertis; calycibus florentibus rubiginosis 6—6.5 mm longis, extus ad venas rufo-floccosis; corollarum rosearum tubo 9 mm longo sat crasso, labia superiore 6 mm alta; stylo fere glabro.

Haiti: Massif de la Selle, Morne de la Selle.

428. **S. eriocalyx** Bert. ex Roem. and Schult., Syst. 1 Addit. 2, 246, 1827 per specim. in Jamaica a Bertero lectum constituta est; specimina vera vidi.

Frutex diffusus altitudine ad 3 m, ramulis molliter pubescentibus; foliorum laminis mollibus anguste ovatis vel ovato-lanceolatis plerumque 8—12 cm longis, supra medium acuminatis, in apice acutissimis, in basi rotundato-angustatis, marginibus serrulatis pagina superiore cinerea molliter hirtella, inferiore albo-tomentosa, petiolis pubescentibus plerumque 2,5—5 cm longis elatis; floribus circiter 6 in verticillastris bracteis caducis subtentis in spicis numerosis 3—8 cm longis tomentosis confertis; calycibus florentibus extus densissime purpureo-lanatis (interdum? albis) 6 mm longis crassiusculis, labiis vix 1 mm longis obtusis; corollarum roseo-purpurearum tubo 7,5 mm longo, infra medium invaginato, labia superiore 6 mm alta, inferiore subaequilonga.

Jamaica: Garden Lawn to Content Gap, 500 m.

429. **S. jamaicensis** Fawc. ex Urb., Symb. Antill. 1, 396, 1900 per specim. in Jamaica ad Jim Crow Peak in Blue Mts. ab Hart (no. 1415) et Harris (no. 7327) lecta constituta est; typum (Harris no. 7327) a Urban designatum in herb. Mus. Berol., isotypos in herb. Kew., horti bot. nov. Eborac. et Smithson. vidi.

Frutex altitudine fere ad 3 m, ramulis molliter pubescentibus; foliorum laminis elliptico-lanceolatis plerumque 5—8 cm longis, supra medium angustatis, in apice acutis, in basi ad petiolos plerumque 1—1,5 cm longos angustatis, marginibus serrulatis, pagina superiore sparse hirtella fere glabra, inferiore cinereo-puberula interdum albo-tomentella venis prominulis; floribus plerumque 6 in bractearum caducarum axillis dispositis in spicis pubescentibus 3—6 cm longis dispositis; calycibus florentibus extus purpureo-pubescentibus 4,5 mm longis, labiis circiter 1 mm longis obtusiusculis; corollarum roseo-purpurearum tubo 6,5 mm longo ad medium invaginato, labia superiore 6 mm alta, inferiore breviore.

Jamaica: Jim Crow Peak, 1900 m.

430. **S. clarendonensis** Britton in Bull. Torr. Bot. Cl. 48, 340. 1922 per specim. in Jamaica in silvis Peckham regione upper Clarendon ab Harris (no. 12787) lectum constituta est; typum in herb. horti bot. Nov. Eborac. vidi.

Frutex diffusus altitudine ad 3 m, ramulis minutissime extenso-hirtellis; foliorum laminis elliptico-lanceolatis plerumque 7—11 cm longis, supra medium gradatim angustatis, in apice acutissimis, in basi ad petiolos graciles 1,5—4 cm longos angustatis, marginibus serrulatis, paginis ambobus glabris, inferiore pallidiore; floribus 1—3 in bractearum linearium perstatarum axillis positis, in spicis laxis gracilibus extenso-hirtellis 5—8 cm longis dispositis; calycibus florentibus 4.5 mm longis extus glabris, labiis acutis 1,5 mm longis: corollarum roseo-purpurearum tubo 7 mm longo, ad medium invaginato, labia superiore 4.5 mm alta, inferiore breviore.

Jamaica: Peckam woods, upper Clarendon, 800 m.

431. **S. secundiflora** Rusby, Descr. New. Sp. S. Am. Pl. 111. 1920 per specim. in Colombiae prov. Magdalena in Sierra Nevada de Santa Marta prope Bonda a H. H. Smith (no. 567) lectum constituta est; typum in herb. horti bot. Nov. Eborac. vidi.

Frutex altitudine 1—3 m ramis pilis appressis hirtellis glabratis: foliorum laminis late ovatis etiam subrotundis, 8—12 cm longis, 6—8 cm latis, in apice acuminatis, in basi rotundatis interdum rotundato-angustatis, margine serrulato convexiore, paginis ambabus viridibus fere glabris petiolis 2—4 cm longis elatis; floribus 6—12 in verticillastris bracteis canescentibus lanceolato-caudatis 2—3 mm longis subtentis, glomerulis inter se 2—12 mm distantibus in spicas sat densas 5—10 cm longas subsecundas confertis, pedicellis gracilibus 2—5 mm longis elatis: calycibus florentibus extus brevissime appresso-hirtellis 7 mm longis, in maturitate 8—9 mm longis, labiis ambabus assurgentibus, superiore acuminata 2,5 mm longa 5—7-venia, inferiore laciniis subcaudatis 4—4,5 mm longis, infra medium connatis: corollarum coccinearum tubo 12 mm longo sub labia inferiore constricto-ventricoso intus nudo, labia superiore 3 ad 3,5 mm alta, inferiore subaequilonga.

Colombia: Magdalena: in Sierra Nevada de Santa Marta, prope Bonda, 100 ped.; Ocana, 2500 ped.; Campo Alegre in dumetis et in declivitatibus apricis, 1500 ped.

432. **S. camaraefolia** Benth. in DC., Prodr. 12, 342, 1848 per specim. in Colombiae prov. Magdalena in Sierra Nevada de Santa Marta a Purdie lectum constituta est; typum in herb. Kew. vidi. — *S. leucocalyx* Briq. in Ann. Conserv. et Jard. Bot. Genève 2, 164, 1898 per specim. in Colombiae prov. Norte de Santander

prope Ocana a Schlim (no. 1108) lectum constituta est; typum in herb. Delessert. vidi.

Frutex ut videtur ramis gracilibus breviter pubescentibus; foliorum laminis 5—8 cm longis, 2,5—4,5 cm latis, ovatis, rarius ovato-lanceolatis, in apice acuminatis, in basi rotundato-angustatis, petiolis 8—12 mm longis elatis, margine crenato-serrulato, pagina superiore hirtella, inferiore molliter pubescente; floribus 3—6 in verticillastris bracteis deciduis ovatis acuminatis hirtellis 5—15 mm longis subtentis, glomerulis demum inter se 0,5—2 cm distantibus in spicis interruptis subsecundis 5—25 cm longis dispositis; calycibus florentibus extus appresso-hirtellis incanis 9 mm longis, in maturitate paulo auctis, labiis ambabus assurgentibus 3 mm longis acuminatis, superiore 3-venia, pedicellis 4—5 mm longis elatis; corollarum tubo 18—19 mm longo sub labia inferiore ventricoso intus nudo, labia superiore 6 mm alta, inferiore subaequilonga.

Colombia: Magdalena: in Sierra Nevada de Santa Marta; Norte de Santander: Ocana, 3500 ped.

433. **S. venulosa** Epl. in Rep. Spec. Nov., Beiheft 85, 105, 1936 per specim. in Colombiae prov. Caldas prope Belen a Pennell (no. 10616) lectum constituta est; typum in herb. Acad. Sci. Nat. Phil., isotypum in herb. Smithson. vidi.

Herba perennis altitudine 40—50 cm ramis praesertim ad angulos hirsutis; foliorum laminis 6—9 cm longis, 3—3,5 cm latis, ovatis, breviter acuminatis, in basi ad petiolos 5—10 mm longos cuneato-extenuatis margine serrato, paginis ambabus fere glabris, superiore hirtella, inferiore ad venas hirtella, venulis reticulato-prominulis violaceis; floribus 1—3 in verticillastris bracteis ovatis 2—3 mm longis caducis subtentis, glomerulis demum inter se 1—2 cm distantibus in spicis interruptis 8—10 cm longis glanduloso-pubescentibus dispositis; calycibus florentibus extus sparse glanduloso-pubescentibus violaceis 8—9 mm longis, labiis vix 1,5 mm longis, superiore sub-5-venia et inferiore laciniis acutis; corollarum tubo 18 mm longo intus nudo sub labia inferiore leniter ventricoso, labia superiore 6 mm alta, inferiore 7 mm longo.

Colombia: Caldas: prope Belen in declivitate humida aprica 1500—1700 m.

434. **S. pseudolantana** Epl. in Rep. Spec. Nov., Beiheft 85, 104, 1936 per specim. in Colombiae prov. Huila in sylvis prope Neiva a Rusby et Pennell (no. 574) lectum constituta est; typum in herb. horti bot. Nov. Eborac. vidi.

Frutex ramis arcuato-ascendentibus praecipue ad sulcos villosis, demum glabris; foliorum laminis coriaceis 6—10 cm longis, 3—5 cm latis, ovato-ellipticis, breviter acuminatis, in

basi rotundatis vel rotundato-angustatis, margine infra medium convexo nec ad basim concava, serrato, pagina superiore nunc sparse nunc dense hirsuta, rugosula, inferiore maximam partem fere glabra ad venas hirtella, frequenter tamen praesertim ad venas sparse villosa, venis elevatis, transversis prominulis, petiolis 0,5—1,5 cm longis saepius villosis elatis; floribus circiter 6 in verticillastris bracteis caducis non visis subtentis, glomerulis demum inter se 1—2 cm distantibus, in spicas interruptas villosas 10—20 cm longas sat angustas approximatis; calycibus florentibus extus pilis crassiusculis 1—1,5 mm longis villosis 10 mm longis, in maturitate vix auctis, labia superiore 3-venia acuminato-caudata, inferiore laciniis acuminatis, infra medium connatis, pedicellis villosis 4—5 mm longis elatis; corollarum tubo 17 mm longo leniter ventricoso intus nudo, labia superiore 10—11 mm alta, inferiore paulo breviore.

Colombia: Huila: in silvis prope Neiva in Cord. Orient. 1800—2300 m; in Quebrada prope Neiva in Cord. Orient. 700 ad 1500 m; Paridi, 1200 m.

435. S. **tortuosa** Kunth in Humboldt et Bonpland, Voy., Nov. Gen. et Sp. Pl. 2, 222, t. 142, 1817 per specim. verisimiliter in Ecuador prope Quito (in Colombiae andibus Quindiuensibus fide Kunth) ab Humboldt et Bonpland lectum constituta est; typum in herb. Mus. Paris. vidi.

Frutex altitudine ad 3 m ramulis arcuato-ascendentibus, pubescentibus mox glabratis; foliorum laminis 4,5—12 cm longis, 3—5,5 cm latis, nunc ovatis nunc ovato-lanceolatis, in apice acutis vel leniter acuminatis, in basi rotundatis, petiolis 1—2 cm longis elatis, margine serrulato, pagina superiore hirtella, inferiore tomentosa, ambabus mollibus; floribus 3—6 in verticillastris bracteis ovato-acuminatis glabratis 5—10 mm longis deciduis subtentis, glomerulis demum inter se 1—2 cm distantibus, in spicas interruptas densas 10—15 cm longas confertis; calycibus florentibus extus mollissime et dense lanatis, interdum fere glabris, 10—17 mm longis, in maturitate paulo auctis labiis abrupte acuminato-caudatis, superiore sub-5-venia, pedicellis 3—5 mm longis elatis; corollarum tubo 19—26 mm longo superne gradatim ampliato intus nudo, labia superiore erecta 12—16 mm alta, inferiore 8 ad 9 mm longa.

Ecuador: in regione temperata montis Pichincha; Quito; in valle Chillo prope Santa Rosa, 9600 ped.; prope Baños in valle fl. Pastaza, 1900 m. in silvis et in fruticetis.

var. **detonsa** Epl. in Rep. Spec. Nov., Beiheft 85, 106, 1936 per specim. in Ecuador prov. Pichincha prope Quito ab Holway

(no. 889) lectum constituta est; typum in herb. Smithson., isotypum in herb. horti bot. Nov. Eborac. vidi.

Calycibus detonsis interdum minoribus.

Ecuador: ad Tambillo; in silvis supra Baños, Tungurahua. 1800—2500 m; Quito; in monte Tungurahua, 1800—3000 m; inter Otavalo et Malchingui, 2400—3000 m; pagum Guapulo, 2700 m.

436. **S. moschata** Kunth in Humboldt et Bonpland, Voy. Nov. Gen. et Sp. Pl. 2, 293, t. 143, 1817 per specim. in Colombiae prov. El Cauca prope Almaguer a Humboldt et Bonpland (no. 2084) lectum constituta est; typum in herb. Mus. Berolin. isotypum in herb. Mus. Par. vidi.

Frutex altitudine ad 4 m ramis superne rufo-villosis mox glabris; foliorum laminis 6—14 cm longis, 2,5—6,5 cm latis, ovatis, in apice breviter acuminatis, in basi rotundatis et ad petiolos 0,5—3 cm longos abrupte cuneato-decurrentibus, margine serrato, paginis ambabus vel omnino glabris vel pilis brevibus flavidis (siccis) sparse conspersis; floribus 1—3 in verticillastris bracteis 6—12 mm longis ovatis acuminatis subglabris purpureis caducis subtentis, glomerulis demum inter se 3—12 mm, in spicas interruptas 5—15 cm longas confertis; calycibus florentibus extus flavido-hirtellis fere glabris, 10—14 mm longis, in maturitate paulo auctis, labiis 4—6 mm longis ambabus acuminatis, inferiore laciniis saepe omnino connatis, pedicellis 3—5 mm longis elatis; corollarum tubo 20—26 mm longo, intus nudo, superne gradatim ampliato sub labia inferiore constricto subventricoso, labia superiore 10—14 mm alta, inferiore breviore.

Colombia: El Cauca: juxta urbem Almaguer; La Gallera in valle Micay ad Rio San Joaquin in aprico, 1100—1300 m; inter El Ramal et Rio Sucio ad Popayan, 2000—2200 m; Alto San Antonio prope Tocata in valle Rio Dagua; Timbio ad Popyayn, 1500 m; Tacueyo in valle Rio Pala, Cord. centr., 1800 m; infra Jumbolo in valle Rio Palo, 2100 m.

86. Sect. **Iodanthae.**

Herbae perennes suffruticosae foliis ovato-lanceolatis rarius ovatis plus minusve acuminatis et in basi rotundatis; floribus 3—12 in verticillastris bracteis caducis subtentis dispositis in spicis densis saepius paniculatis confertis; calycum labia superiore 3-venia (rarius 5—7-venia) ambabus brevibus ore etiam subtruncato; corollarum roseo-purpurearum tubis tubiformibus leniter arcuatis superne gradatim ampliatis, nullomodo ventricosis nec invaginatis, ad basim papillis quatuor ut videtur binis conjunctis ornatis, labia superiore erecta quam inferior longiore; staminibus in faucibus positis e galea exsertis; gubernaculo infra connexum

dente parvo ornato; stylo glabro, raro sparse pubescente, ramo postico longiore. Herbae mexicanae; species typica est *S. iodantha*.

Foliorum laminae subtus mollissime albo-tomentellae . . . . 439. *S. arbuscula*
Foliorum laminae subtus glabrae vel cinereo-pubescentes
Corollarum tubi 15—17 mm longi . . . 437. *S. iodantha*
Corollarum tubi 21—26 mm longi . . . 438. *S. Townsendii*

437. **S. iodantha** Fern. in Proc. Am. Acad. 35. 547. 1900 per specim. in Mexico prov. Morelos in montibus supra Cuernavaca a Pringle (no. 8039) lectum constituta est; typum in herb. Gray., isotypos in herb. Acad. Sci. Philad., Univ. Calif. et horti bot. Nov. Eborac. vidi. — *S. michoacana* Fern. in Proc. Am. Acad. 35, 548. 1900 per specim. in Mexico prov. Michoacan in collibus aridis silvestribus prope Patzcuaro a Pringle (no. 3600 et 3946) lecta constituta est; typos in herb. Gray., isotypos plures vidi.

Herba perennis verisimiliter suffruticosa altitudine 1—3 m caulibus superne puberulis, foliorum laminis 3,5—12 cm longis, ovato-lanceolatis, rarius ovatis, acuminatis, in basi saepius rotundatis, pagina superiore fere glabra, inferiore sparse pubescente, pallidiore, marginibus serratis, petiolis 0,5—4 cm longis elatis; floribus in spicas 15—30 cm longas graciles paniculatas confertis; calycibus florentibus 3—4 mm longis extus ad venas sparse hirtellis frequenter glabratis, labiis brevissimis ore itaque subtruncato, in maturitate paulo auctis et nuculis distentis; corollarum roseo-purpurearum tubo 15—17 mm longo, intus papillis quatuor ornato, labia superiore 5.5—7 mm alta.

Differences in leaf-form are slight and do not hold; the differences of flower color are uncertain in dried material; the calyces of *S. iodantha* are slightly larger. In habit, aspect, pubescence and flower structure they do not differ appreciably. In all these respects they are scarcely separable from *S. Townsendii*, save in the flower size. The specimen from Sinaloa referred here may not be conspecific. Its calyces approach more nearly those of *S. purpurea*.

Mexico: Temascaltepec, 1340—2480 m; Morelos: Cuernavaca, 2600 m; Sierra de Tepaxtlan 2500 m; Guerrero: Mina: Fresnos, 2180 m; Michoacan: Morelia; Patzcuaro, Mt. Patamban, 2200 ad 3200 m; Jalisco: San Sebastian, 1500 m; (?) Sinaloa: El Carrizo, 800 m.

438. **S. Townsendii** Fern. in Proc. Am. Acad. 40, 55, 1905 per specim. in Mexico prov. Chihuahua prope Chuichupa in montibus a Townsend et Barber (no. 426) lectum constituta est; typum

in herb. Gray., isotypos in herb. Coll. Pomonae, Smithson., Kew. et horti bot. nov. Eborac. vidi.

Herba perennis altitudine 1 m, caulibus superne hirtellis; foliorum laminis 8—12 cm longis, ovato-lanceolatis, acutis, in basi rotundatis, margine serrato, pagina superiore hirtella, inferiore pubescente cinerea petiolis 1—3 cm longis elatis; floribus in spicas ut videtur strictas 10—20 cm longas confertis; calycibus florentibus 3,5—4,5 mm longis extus hirtellis, labiis brevissimis ore subtruncato, in maturitate paulo auctis, nuculis distentis; corollarum tubo 21—26 mm longo, labia superiore 6—8 mm alta.

Mexico: Chihuahua: near Chihuahua at Chuichupa, 2500 m; Guayanopa cañon, 1600 m.

439. **S. arbuscula** Fern. in Proc. Am. Acad., **45**, 421, 1910 per specim. in Mexico prov. (?) Guerrero in montibus Sierra Madre dictis a Langlassé (no. 767) lectum constituta est: typum in herb. Gray. vidi.

Suffrutex ut videtur altitudine ad 2,5 m, ramulis molliter et dense pubescentibus: foliorum laminis ovatis 7—11 cm longis (et ? ultra), supra medium acuminatis, in basi rotundatis (et ? cordatis), paginis ambabus mollissime pubescentibus, inferiore incana, marginibus serrulatis, petiolis circiter 1 cm longis elatis; floribus in spicas densas circiter 20 cm longas confertis, in basi breviter ramosis: calycibus florentibus 4,5 mm longis extus albo-lanatis, in maturitate paulo auctis; corollarum tubo 15—17 mm longo, labia superiore 6 mm alta.

Mexico: ? Guerrero: in Sierra Madre, 1500 m.

87. Sect. **Purpureae.**

Subsect. *Purpureae* Epl. in Rep. Spec. Nov., Beiheft **85**, 106, 1935; species typica est *S. purpurea*.

Herbae perennes suffruticosae vel frutices foliis ovatis rarius ellipticis; floribus 3—6 et ultra in verticillastris bracteis caducis subtentis in spicis interdum paniculatis dispositis; calycibus extus saepius lanatis, nunc purpureis nunc albidis, rarius glabratis, labiis acuminatis, superiore 3-venia: (interdum sub-5-venia *S. sordidae*): corollarum roseo-purpurearum tubo tubiformi superne gradatim ampliato nullomodo invaginato, intus ad basim 2–4 papillis (? interdum quatuor infra medium binis conjunctis) ornato, labia superiore erecta, inferiore breviore leniter trilobata: staminibus in galea inclusis; stylo piloso (*S. Littae* et *S. curviflorae* glabro); gynobasis cornu ovula paulo superante. Plantae a prov. Durango Mexicanorum usque ad Colombia disseminatae sunt.

Plantae colombianae

Corollarum tubi 10—12 mm longi . . . . 443. *S. sordida*

Corollarum tubi 15—16 mm longi
Calyces florentes 7,5—8 mm longi: folia subtus molliter pubescentia . . . . . 444. *S. rufula*
Calyces florentes 9—10 mm longi; folia subtus dense molliterque tomentosa . 445. *S. tolimensis*
Plantae Mexicanorum
Folia anguste ovata vel elliptica, plerumque 1—2 cm lata; styli glabri . . . . 440. *S. curviflora*
Folia ovata saepius 3—6 cm lata
Corollae extus pilis crassis dense villosae; tubi fauces 3—6 mm diametro . . . . 441. *S. Littae*
Corollae extus pilis tenuibus pubescentes; tubi fauces 1,5—3 mm, rarius 4 mm diametro
Calycum tubi 3—6 mm longi . . . . 442. *S. purpurea*
Bracteae 3—4 mm longae, pubescentes caducae
Bracteae 8—15 mm longae, glabrae atrae imbricatae deciduae . . . . 441 b. *S. ionocalyx*
Calycum tubi 9—10 mm longi . . . . 441 a. *S. Matudae*

440. **S. curviflora** Benth., Lab. Gen. et Sp. 284, 1833 et in DC., Prodr. 12, 340, 1848 per specim. in Mexico prov. Mexico prope Tlalpujahua a Graham (no. 97) lectum constituta est; typum in herb. Kew. vidi.

Herba perennis ut videtur ramis gracilibus tortuosis pubescentibus, internodiis 1—4 cm longis: foliorum laminis 3—4,5 cm longis, 1—2 cm latis, ellipticis vel anguste ovatis, acutis, in basi rotundatis, petiolis pubescentibus 8—15 mm longis elatis, margine obscure serrato, pagina superiore hirtella, inferiore molliter pubescente cinerea; floribus circiter tribus in verticillastris, glomerulis demum inter se 0,5—1 cm distantibus in racemis gracilibus 5 ad 10 cm longis dispositis; calycibus florentibus 7—8 mm longis extus hirtellis, labiis 1,5—3,5 mm longis, saepius acuminatis in maturitate paulo auctis; corollarum tubo 18—22 mm longo sat crasso intus ad basim papillis quatuor infra medium binis conjunctis ornato. labia superiore 10—13 mm alta; staminibus in galea inclusis; stylo glabro.

Mexico: Hidalgo: Zimapan; Michoacan: Tlalpuhajua; Puebla: Coxcatlan.

441. **S. Littae** Vis., Padov. Nuov. Saggi 6, 84, 1847.

Herba ut videtur stricta altitudine ad 1,5 m, caulibus superne glabris nisi sparse appresso-hirtellis, internodiis sat elongatis: foliorum laminis 4—8 cm longis, late ovatis, acuminatis, in basi rotundatis, marginibus serratis, paginis ambabus glaberrimis, in-

feriore pallidiore, petiolis 1—4 cm longis elatis; floribus saepius tribus in verticillastris in paniculis strictis angustis speciosis 20—50 cm longis dispositis; calycibus florentibus 7—8 mm longis, ad venas appresso-hirtellis fere glabris, labiis attenuatis circiter 2,5 mm longis; corollarum tubo 15—18 mm longo, intus ad basim papillis quatuor infra medium binis conjunctis ornato; stylo fere glabro.

The pubescence of the corollas of *S. Littae* is markedly coarser than that of *S. purpurea.*

Mexico: Oaxaca: Limatlan, 2700 m; Sierra de Clavellinas, 3000 m; inter San Andres et San Miguel; Cumbre de Huehuelcan ad Teotitlan, 2450 m; Tlaxiaco.

441a. **S. Matudae** Epling sp. nov. per specim. in Mexico prov. Chiapas in regione Mariscal ad Siltepec in monte Pasital a Matuda (no. 138) lectum constituta est; typum in herb. Univ. Calif. (Los Angeles) vidi.

Herba perennis habitus *S. membranaceae* caulibus superne pilis extensis vix glandulosis ornatis; foliorum laminis ovatis 8—12 cm longis, in apice acuminatis, in basi rotundato-subcordatis, margine serrato, paginis ambabus, praesertim inferiore pallidiore, ad venas sparse villosis, petiolis ad 6 cm longis elatis; floribus 6—12 in verticillastris pedicellis 5—10 mm longis elatis; calycibus extus ad venas sparse hispidulis florentibus 11 mm longis in maturitate paulo auctis; corollarum tubo 18—19 mm longo intus ad basim papillis quatuor ornato, labia superiore 8 mm alta.

Mexico: Chiapas: Mt. Pasital.

442. **S. purpurea** Cav., Ic. 2, 52, t. 166, 1793 per specim. in horto Matrit. e seminibus mexicanis cultum constituta est; specim. vera in herb. Jussieu. et Ventenat. vidi. — *S. affinis* Cham. et Schlecht. in Linnaea **5**, 99, 1830 per specim. in Mexico prope Jalapa a Schiede et Deppe (no. 141) lectum constituta est; typum in herb. Mus. Berolin. vidi. — *S. farinosa* M. et G. in Bull. Acad. Brux. **11**, II, 78, 1844 per specim. in Mexico prov. Oaxaca prope Yavesia a Galeotti (no. 663) lectum constituta est; typum in herb. Mus. Brux. vidi. — *S. graciliflora* M. et G. in Bull. Acad. Brux. **11**, II, 75, 1844 per specim. in Mexico prov. Vera Cruz prope Zacuapan a Galeotti (no. 630) lectum constituta est; typum in herb. Brux. vidi. — *S. purpurea* var. *pubens* Gray ex Wats. in Proc. Am. Acad. **22**, 446, 1887 per specim. in Mexico prov. Jalisco ad Rio Blanco a Palmer (no. 662) lectum constituta est; typum in herb. Gray. vidi. — *S. oxyphylla* Brandegee in Univ. Calif. Publ., Bot. **6**. 61, 1914 per specim. in Mexico prov. Chiapas in Cerro del Boqueron a Purpus (no. 6874) lectum constituta est; typum in herb. Univ. Calif. (Berkeley) vidi.

Herba perennis interdum suffruticosa altitudine 1—2,5 m caulibus plerumque glabris interdum superne leniter pubescentibus; foliorum laminis saepius 6—12 cm longis, petiolis gracilibus 2—6 cm longis elatis, maximam partem late ovatis, acuminatis, in basi rotundatis, rarius ovalibus et in basi angustato-rotundatis, interdum leniter cordatis, marginibus serrato-crenatis, paginis ambabus glabris, nisi inferiore praesertim juvenilium minutissime puberula pallidiore; floribus 3 et ultra in verticillastris frequenter numerosis in spicas speciosas paniculatas confertis, bracteis parvis caducis subtentis; calycibus florentibus extus saepius molliter hirtellis interdum lanatis nunc albidis nunc purpureis 4—8 mm longis maximam partem 5—7 mm longis, dentibus acuminatis acutissimis plerumque 1,5—3 mm longis, in maturitate paulo auctis; corollarum roseo-purpurearum tubo 10—18 mm longo; stylo rarius glabro.

Salvia purpurea forms a complex unusually similar in vegetative habit and in aspect but more than ordinarily variable in flower size. In this respect it seems to fall into 3 categories. It is difficult to judge from boiled herbarium specimens alone to what extent these are real. The first of these groups, within which Cavanilles' specimens apparently fall is characterized by corolla tubes generally 16—18 mm long. The calyces are usually 6—7 mm, rarely 8 mm long, with teeth usually 2—3 mm, rarely 3.5 mm long. Occasional specimens, however, may have calyces 5 mm long with teeth 1,5 mm long. *S. farinosa* is of this type. It is similar to Conzatti 1569. The second apparent category is characterized by corolla tubes 12—15 mm long. The calyces are usually 5—6 mm, rarely 7 mm long; their teeth are usually 1,5 to 2 mm, rarely 3 mm long. Less often the calyces may be as short as 4 mm and the teeth 1 mm. It is to this category that *S. graciliflora*, based upon a depauperate branch with opposite flowers, belongs. The third category has more basis for recognition. Not only are the flowers smaller, but they are seemingly more slender and straight. Frequently associated with this smaller corolla are oval leaves. The calyces are usually 5—6 mm, rarely 6.5 mm long. Their teeth are usually 1,5—2,5 mm, rarely 3 mm long. Yet in the state of Vera Cruz, where this form (*S. affinis*) mostly occurs, the second form above named frequently occurs and may scarcely be distinguished save on the basis of corolla size. At the same time the proportion of the lower lip to the upper is quite variable, seeming to range from one half its length to nearly as long. *S. purpurea* var. *pubens* is a form of the first category with a soft but scant pubescence in the upper parts. It is scarcely noteworthy. There is apparently no certain geographical basis for these categories. The first occurs chiefly in the states of Michoacan, Oaxaca.

Morelos and Jalisco. The second occurs chiefly in Guatemala and El Salvador and in the Mexican states of Vera Cruz and Chiapas. The third occurs chiefly in the state of Vera Cruz, and in an intermediate form in Guatemala. It must be borne in mind also that the variability in corolla size on a single plant lies partly within the range of these varieties. It is possible to find on a single specimen, flowers apparently in full anthesis with corolla tubes ranging from 10—18 mm in length and the upper lips 6—10 mm in length. *S. oxyphylla* is hardly different from *S. affinis.* The stamens of *Salvia purpurea* are sometimes lightly exserted.

443. **S. sordida** Benth., Pl. Hartweg. 241, 1846 et in DC., Prodr. 12, 321, 1848 per specim. in Colombiae prov. Cundinamarca inter Bogota oppidum et vicum Zipaguira ab Hartweg (no. 1324) lectum constituta est; typum in herb. Kew., isotypum in herb. Mus. Brit. vidi. — ? *S. anaglypha* Briq. in Ann. Conserv. et Jard. Bot. Genève 2, 146, 1898 per specim. in Colombiae prov. Norte de Santander prope Ocana in paramos a Schlim (no. 560 et 1107) lecta constituta est: typos in herb. Delessert., isotypos in herb. Kew., Mus. Brit., et Bruxell. vidi.

Frutex altitudine ad 2 m ramis dense molliterque tomentosis; foliorum laminis 4,5—8,5 cm longis, 2—5 cm latis, ovatis, acutiusculis, in basi rotundatis, margine crenato-serrato, pagina superiore plus minusve bullato-rugosa, hirtella, inferiore dense molliterque tomentosa incana, petiolis 0,5—2.5 cm longis dense tomentosis elatis; floribus 3—6 in verticillastris densis, bracteis 6—8 mm longis, dense lanatis ovatis caducis subtentis, glomerulis inter se 5—8 mm distantibus, in spicas 5—8 cm longas confertis; calycibus florentibus extus lanatis incanis vel purpureis, 7—8 mm longis, labiis 2,5 mm longis, superiore saepius 3-venia et inferiore laciniis acuminatis, in maturitate paulo auctis; corollarum (?) purpurearum tubo 12 mm longo ventricoso, intus ad basim papillis quatuor ornato, labia superiore 4 mm alta, inferiore subaequilonga.

S. anaglypha ex specimine manco et *S. sordida* nisi foliis tenuioribus et floribus paulo minoribus vix differunt.

Colombia: Cundinamarca: Chiquinquira ad Bogota; inter Bogota et vicum Zipaguira; Norte de Santander: in paramos prope Ocana, 8000—10000 ped.

444. **S. rufula** Kunth in Humboldt et Bonpland, Voy., Nov. Gen. et Sp. Pl. 2, 291, 1817 per specim. in Colombiae prov. Tolima in Andibus subfrigidis prope Gallegos a Humboldt et Bonpland lectum constituta est; typum mancum in herb. Mus. Par. vidi. — *S. rufida* Willd. ex Schultes, Mant. 1, 189, 1822 (nomen). — *S. Goudotii* Benth. in DC., Prodr. 12, 339, 1848 per specim. in Colombiae prov. Tolima in montibus prope Ibague a Goudot

lectum constituta est; typum in herb. Kew. vidi. — *S. orophila* Briq. in Beih. Bot. Centralbl. 3, 81, tab. 3, f. 1—3. 1902 per specim. in Colombiae prov. Tolima inter Mediacion et Las Cruces a Pr. Therese von Bayern (no. 287) lectum constituta est; typum mancum nequissimum in herb. Mus. Monac. vidi.

Herba verisimiliter suffruticosa ramulis superne tomentosis; foliorum laminis 5—8 cm longis, 2,5—3,5 cm latis, anguste ovatis, in apice acuminatis, in basi rotundato-angustatis, petiolis 5—12 mm longis elatis, margine crenato-serrulato, pagina superiore sparse hirsuta, inferiore molliter pubescente subtomentosa: floribus 3—6 in verticillastris bracteis ovato-caudatis hirtellis 5—8 mm longis deciduis subtentis, glomerulis demum inter se 1—1,5 cm distantibus in spicas interruptas 5—15 cm longas dispositis; calycibus florentibus extus sparse hirtellis subglabris et glandulis sessilibus conspersis 7,5—8 mm longis, in maturitate paulo auctis, pedicellis 3—4 mm longis elatis; corollarum tubo circiter 16 mm longo, intus ad basim papillis binis ornato, labia superiore 10 mm alta, inferiore 7—8 mm diametro.

Colombia: Tolima: ad Toche: inter Gallegos et Toche in silvis, 2000—2700 m; inter San Miguel et La Lora in silvis: in Quebrada de los Corales in montibus Quindio: Las Maquinas in Cord. occ., 6900 ped.; sequentes nisi floribus paulo minoribus vix differunt; Rio Paez, 1000—1800 m, Lehmann 5825: prope Inza, 1200—2000 m, Lehmann 2258; Huila: prope Guadalupe, Juzepczuk 5727.

445. **S. tolimensis** Kunth in Humboldt et Bonpland, Voy., Nov. Gen. et Sp. Pl. 2, 292, 1817 per specim. in Colombiae prov. Tolima inter Ibague et Tolima a Humboldt et Bonpland lectum constituta est; typum in herb. Mus. Par. vidi.

Frutex ramulis villoso-tomentosis; foliorum laminis coriaceis 5—10 cm longis, 2—5,5 cm latis, maximam partem ovatis, in apice acutis vel acuminatis, in basi rotundatis, interdum rotundato-angustatis, margine crenato-serrato, pagina superiore hirtella subglabra bullato-rugosa, inferiore dense tomentosa venis reticulato-prominulis, petiolis 0,5—1,5 cm longis elatis; floribus 3—12 in verticillastris densis bracteis ovatis 4—8 mm longis dense tomentosis caducis subtentis, glomerulis demum inter se 1—3 cm distantibus in spicis interruptis tomentosis dispositis; calycibus florentibus extus 9—10 mm longis extus lanatis verisimiliter purpureis, in maturitate paulo auctis labiis ambabus acuminatis; corollarum tubo 15—16 mm longo, ventricoso, intus ad basim 2—4 papillis ornato, labia superiore 9—11 alta, inferiore breviore 7 mm diametro.

Colombia: Tolima: Mariquita; in summo montis Quindio, 8000 ped.; inter Ibague et Tolima; prope Volcancito; in paramo del Quindio, 3300 m.

88. Sect. **Floridae.**

Subsect. *Floridae* Epl. in Rep. Spec. Nov., Beiheft **85**, 118, 1936; species typica est *S. florida*.

Frutices foliis ovatis amplis; floribus 6—12 in verticillastris bracteis deciduis subtentis, in spicis interruptis dispositis; calycibus extus rubro-pubescentibus, labia superiore 3-venia, laciniis acuminatis plus minusve caudatis; corollarum tubo cylindrato superne gradatim ampliato, intus nudo, labiis brevibus subaequilongis; staminibus ad fauces positis et e galea 2—8 mm exsertis; stylo piloso.

Frutex peruvianus . . . . 447. *S. florida*
Frutex vel suffrutex guatemalensis . . . . 446. *S. subrubens*

446. **S. subrubens** Epling sp. nov. per specim. in Guatemala prope San Miguel Uspantan a Heyde et Lux (no. 3120) lectum constituta est; typum in herb. Smithson., isotypum in herb. horti bot. Nov. Eborac. et Kew. vidi.

Frutex ut videtur ramulis praesertim inter flores hispiduloirrasis, caeterum glabratis; foliorum laminis late ovatis 6—12 cm longis tenuibus, in apice breviter acuminatis, in basi rotundatis et ad petiolos 2—6 cm longos graciles subito breviter cuneatoangustatis, marginibus serrulatis, paginis ambabus glabris; floribus plerumque tribus in verticillastris bracteis caducis subtentis, in spicis laxis interruptis 20—40 cm longis paniculatis dispositis, glomerulis demum inter se 1—3 cm distantibus; calycibus florentibus 12—14 mm longis, extus praesertim ad venas minute hispidulis subrubentibus, labiis acuminatis subaequilongis, in maturitate paulo auctis, pedicellis 6—7 mm longis elatis; corollarum ? rubrarum tubo superne sat ampliato, intus nudo, 24 mm longo, labia superiore 9—10 mm alta, inferiore subrotunda subaequilonga; staminibus e galea 2—3 mm exsertis; stylo superne pubescente; gynobasis cornu ovula paulo superante.

The assignment of this species here is provisional.

Guatemala: San Miguel Uspantan.

447. **S. florida** Benth. in DC., Prodr. **12**, 338, 1848 per specim. in Peruviae prov. San Martin ad Moyobamba prope Taulia a Matthews (no. 1347) lectum constituta est; typum in herb. Kew., isotypum in herb. Univ. Calif. (Los Angeles) vidi.

Frutex scandens ramulis villosis; foliorum laminis 8—15 cm longis, 2.5—7 cm latis, ovato-ellipticis, leniter acuminatis, in basi angustatis vel rotundatis, petiolis 1,5—3,5 cm longis villosis elatis,

margine serrato, pagina superiore sparse hirtella, inferiore villosa; floribus 6—12 in verticillastris bracteis 8—10 mm longis, ovato-acuminatis deciduis puberulis subtentis, glomerulis demum inter se 1,3 cm distantibus in spicas interruptas 15—25 cm longas approximatis; calycibus florentibus purpureis extus sparse rubro-pubescentibus, intus hispidulis, 15—16 mm longis, in maturitate paulo auctis, labiis 5—6 mm longis acuminato-caudatis hiantibus, inferiore laciniis ad basim connatis, pedicellis gracilibus 6—10 mm longis pubescentibus elatis; corollarum tubo 30 mm longo, intus nudo, labia superiore 5 mm alta, inferiore subaequilonga; staminibus ad fauces positis, utrimque glandulis minutis conspersis, filamentis 5—6 mm longis, jugo 38—39 mm longo supra medium connexo, gubernaculo 25—26 mm longo.

Peruvia: San Martin; ad Moyobamba prope Taulia: Amazonas: Chachopoyas.

89. Sect. Albolanatae.

Subsect. *Albolanatae* Epl. in Rep. Spec. Nov., Beiheft 85. 111, 1936; species typica est *S. tomentella*.

Suffrutices pulcherrimi insignes foliis oblongo-ellipticis vel oblongo-lanceolatis breviter petiolatis; floribus 3—6 in verticillastris bracteis caducis subtentis, in spicis interruptis speciosis approximatis; calycibus extus pilis vel ramosis vel simplicibus lanatis, purpureis vel incanis, labia superiore paulo breviore 5—7-venia; corollarum albarum rarius pallide violacearum tubo intus nudo leniter ventricoso, labiis pro rata brevibus, superiore galeata, inferiore subaequilonga approximata concava; staminibus in galea inclusis, gubernaculo ad connexum in dentem parvum retrorsum dilato; stylo utrimque piloso, ramo postico longiore.

Pili ramosi: plantae brasilianae . . . . . . 449. *S. tomentella*
Pili simplices; plantae mexicanae . . . . . 448. *S. leucantha*

448. **S. leucantha** Cav., Icones 1, 16, t. 24, 1791 per specim. e seminibus mexicanis eductum constituta est; specim. verum in herb. Jussieu. vidi. — *S. bicolor* Sessé et Moc., Pl. Nov. Hisp. ed. 2, 8, 1893 et in Fl. Mex. ed. 2, 7, 1894, etiam *S. discolor*, Fl. Mex. ed. 2, 6, 1894: specimina ex herb. hort. Matrit. vidi.

Suffrutex pulcher globosus altitudine ad 1 m, ramis superne praesertim inter flores lanatis; foliorum laminis 6—15 cm longis, 8—16 mm latis, oblongo-lanceolatis, acutis, in basi rotundatis, petiolis 8—15 mm longis elatis, marginibus serrulatis, pagina superiore bullato-rugosa, viridi, hirtella, inferiore albo-tomentosa, interdum cinerea; floribus 3—6 in verticillastris bracteis ovato-ellipticis dense lanatis caducis subtentis, glomerulis inter se 1—2 cm distantibus in spicis interruptis pulcherrimis 15—50 cm longis

approximatis; calycibus florentibus 7 mm longis extus dense purpureo-lanatis rarius albis; corollarum albarum tubo 13—14 mm longo, labia superiore vix 3 mm alta.

Mexico: Vera Cruz: Orizaba; Tlaxcala; Mexico: Temascaltepec; Morelos: Sierra de Tepaxtlan, 2500 m; Zacatecas; Sierra de los Morones prope Plateado; San Luis Potosi: ad urbem et prope Sta. Maria de Rio.

449. **S. tomentella** Pohl, Pl. Bras. Ic. 2, 138, t. 194, 1831 per specim. in Brasiliae prov. Minas Geraes in campis herbidis ad Guarda Mor ante Paracatu a Pohl lectum constituta est; typum in herb. Mus. Vindob. vidi. — *S. velutina* Benth., Lab. Gen. et Sp. 275, 1833 et in DC., Prodr. 12, 323, 1848 per specim. in Brasiliae prov. Minas Geraes prope S. Antonio do Monte a Sellow (no. 526) lectum constituta est; typum in herb. Mus. Berolin., isotypos in herb. Kew. et Univ. Calif. (Los Angeles) vidi (non Vahl, Enum. 1, 268, 1804).

Herba perennis caulibus paucis altitudine ad 1 m e caudice lignoso vel pubescentibus vel tomentosis pilis ramosis; foliorum laminis 4—8 cm longis, 1.5—6 cm latis, infimis subrotundatis, superioribus oblongo-ellipticis, utrimque obtusis vel in apice acutiusculis, in basi ad petiolum 1—2 mm longum angustatis, margine crenato-serrato, paginis ambabus, praesertim inferiore, cinereo-pubescentibus, pilis ramosis; floribus 3—6 in verticillastris bracteis lanceolato-attenuatis 3—6 mm longis caducis pubescentibus subtentis, glomerulis inter se 0.5—5 cm distantibus; calycibus florentibus 12—13 mm longis, extus pilis ramosis sparse pubescentibus, in maturitate paulo auctis, pedicellis 5—6 mm longis elatis, labia superiore acutiuscula, inferioris laciniis similibus; corollarum extus candido-lanatarum tubo 17—18 mm longo leniter ventricoso intus nudo, labia superiore 5 mm alta, inferiore 5—6 mm longa.

Brasilia: Minas Geraes: San Antonio do Monte; Fazenda da Roma; Fazenda de Pompeo; Guarda Mor ante Paracatu; Lagoa Santa; in campis ad flumen Itacambirusu, ad Minas Novas; Oxaxa; S. João; Formigas; in Serra das Araras; Uberava. — Goyaz: inter Pisarao et São Domingo; inter Arraial de Catalão et Pe-de-Morro; inter Vasio et Bomfin; inter Rio Uru et Rio das Pedras; prope Vasio; ad Cascade de Rasgao; Villa Boa; Olho d'Agoa.

90. Sect. Curtiflorae.

Herbae perennes vel frutices foliis amplis saepius ovatis vel cordatis plus minusve pubescentibus; floribus 3—6 et ultra in verticillastris bracteis caducis rarius perstatis subtentis, in spicis

interruptis approximatis; calycum labia superiore 3—7 venia. corollarum ut videtur rubropurpurearum tubo fere cylindrato interdum subflexuoso intus nudo, labia inferiore et interdum superiore magnam partem brevissima; staminibus saepe inter tubi medium et fauces positis vel in galea inclusis vel e corolla exsertis, connectivo integro vel ad connexum dente parvo ornato; stylo saepius piloso rarius glabro, ramo postico interdum longissimo. Species typica est *S. curtiflora*.

Plantae mexicanae
  Corollarum tubi 27—34 mm longi; labia superior 5,5—10 mm alta
    Calycum labiae aristulatae 8—10 mm longae . . . . 450. *S. longistyla*
    Calycum labiae 1—2 mm longae curtae . 451. *S. nervata*
  Corollarum tubi 20—27 mm longi
    Corollarum labiae 2—2,5 mm longae subaequilongae; stamina inter tubi medium et fauces posita . . . . 453. *S. curtiflora*
    Corollarum labiae 5—7 mm longae: stamina ad fauces posita
      Plantae chiapenses . . . . 452. *S. venosa*
      Plantae guatemalenses . . . . 454. *S. excelsa*
Plantae brasilianae
  Bracteae deciduae
    Staminum juga 12 mm longa; folia in basi angustata . . . . 457. *S. fruticetorum*
    Staminum juga 20—25 mm longa; folia in basi rotundata
      Folia pubescentia . . . . 458. *S. tenuiflora*
      Folia glabrata . . . . 456. *S. mentiens*
  Bracteae perstatae . . . . 455. *S. neovidensis*

The species of this subsection are so inadequately represented in herbaria that it is difficult to judge their relationships. I am inclined to believe, however, that most of those here assembled form a natural group.

450. **S. longistyla** Benth., Lab. Gen. et Sp. 295, 1833 et in DC., Prodr. 12, 344, 1848 per specim. in Mexico prov. Michoacan prope Zinapecuaro a Graham lectum constituta est; typum in herb. Kew. vidi. — *S. rectiflora* Vis., Sem. Hort. Patav. 145, 1839 per specim. cultum constituta est; typum non vidi. — *S. tubiformis* Klotzsch ex Otto et Dietr., Allg. Gartenz. 9, 114, 1841 per specim. e seminibus mexicanis a Schiede et Deppe missis eductum constituta est; typum non reperire potui. — *S. aristulata* Mart. et Gal. in Bull. Acad. Brux. 11, 2, 67, 1844 per specim. in

Mexico prov. Oaxaca in Sierra de Llano verde a Galeotti (no. 717) lectum constituta est; typum in herb. Mus. Brux. vidi.

Herba suffruticosa vel frutex altitudine ad 3,5 m ramulis pilis extensis villosis; foliorum laminis generis maximis cordatis interdum late ovatis, 10—25 cm longis, acuminatis, marginibus serratis, fere glabris tenuibus. petiolis villosis 8—15 cm longis elatis; floribus 3—6 in verticillastris bracteis caducis subtentis, in spicis interruptis laxis 30—50 cm longis dispositis; calycibus florentibus 21—24 mm longis extus piloso-glandulosis, labiis subaequilongis attenuatis 8—10 mm longis, superiore sub-5-venia, in maturitate vix auctis, pedicellis 10—18 mm longis elatis: corollarum atro-purpurearum tubo 27—35 mm longo, labia superiore erecta 5,5—8 mm alta, inferiore paulo breviore deflexa; stylo hirtello.

Mexico: Vera Cruz: Orizaba; Puebla: Atlixco, 1600 m; Mexico: Temascaltepec, 1500—2450 m; Oaxaca: Tlapancingo; Oaxaca, 1700 m; Michoacan: Morelia, 1850 m; Santa Catarina prope Uruapan, 1600 m, in pineto; Jalisco: prope Lago Chapala; Etzatlan; Durango: San Ramon; Sianori.

451. **S. nervata** M. et G. in Bull. Acad. Brux. **11**, **II**, 77, 1844 per specim. in Mexico prov. Oaxaca in Cerro de San Felipe a Galeotti (no. 650) lectum constituta est; typum in herb. Mus. Brux., isotypum in herb. Kew. vidi. — *S. monochila* J. D. Smith in Bot. Gaz. **23**. 13, 1897 per specim. in Guatemala prope Todo Santos a Nelson (no. 3635) lectum constituta est; typum in herb. Smithson. vidi.

Frutex multiramosus altitudine ad 2 m ramulis pubescentibus; foliorum laminis ovatis plerumque 5—9 cm longis, acuminatis, in basi saepius rotundatis, petiolis gracilibus 1—4 cm longis elatis, marginibus serrulatis, pagina superiore fere glabra, inferiore cinereo-pubescente; floribus 3—6 in verticillastris bracteis caducis subtentis, glomerulis demum inter se 1—2 cm distantibus in spicis 10—20 cm longis dispositis; calycibus florentibus 12—16 mm longis. extus praesertim ad venas sparse hirtellis; corollarum tubo 33 ad 34 mm longo, labia superiore 8—10 mm alta, inferiore brevissima subnulla; staminibus inter tubi medium et fauces positis; stylo glabro.

Mexico: Oaxaca: Cerro de San Felipe, 2600—3000 m. — Guatemala: Chimaltenango: Buena Vista, Santa Elena: Huehuetenango: Todos Santos, 3200 m; Sierra Cuchumatanes supra Chiantla. 3400 m, facie australi.

452. **S. venosa** Fern. in Proc. Am. Acad. **35**. 545. 1900 per specim. in Mexico prov. Chiapas ad San Cristobal a Nelson (no. 3138) lectum constituta est; typum in herb. Gray., isotypum in herb. Smithson. vidi.

Herba ut videtur ramulis pilis extensis villosis; foliorum laminis ovatis 4—6 cm longis, acuminatis, in basi rotundatis et ad petiolos villosos 1—2 cm longos subito cuneato-angustatis, marginibus crenato-serratis, paginis ambabus, praesertim inferiore pallidiore, villosulis, floribus plerumque tribus in verticillastris bracteis caducis subtentis, in spicis interruptis laxis 10—15 cm longis dispositis, glomerulis demum inter se 0,5—1 cm distantibus; calycibus florentibus extus villosis 8—8,5 mm longis; corollarum purpurearum tubo fere recto cylindrato 20—23 mm longo, intus nudo, labia superiore 4—5 mm alta, galeata, inferiore brevissima 1—1,5 mm longa; staminibus ad fauces positis, gubernaculo ad connexum in dentem parvum producto; stylo piloso, gynobasis cornu ovula paulo superante.

Mexico: Chiapas: San Cristobal, 2300—3000 m.

453. S. **curtiflora** Epling sp. nov. per specim. in Guatemala inter Quczaltenango et Colombo a Skutch (no. 1972) lectum constituta est; typum in herb. Univ. Calif. (Los Angeles) vidi.

Frutex altitudine ad 3 m ramulis superne hirtellis; foliorum laminis ovatis maximam partem 8—10 cm longis, in apice acuminatis, in basi cuneato-angustatis, petiolis gracilibus 1—5 cm longis elatis, marginibus serrulatis, paginis ambabus sparse hirtellis; floribus 6 et ultra in verticillastris bracteis caducis subtentis, glomerulis demum inter se 1—3 cm distantibus in spicis interruptis 20—30 cm longis dispositis; calycibus florentibus extus ad venas sparse hispidulis 10—13 mm longis; corollarum tubo 25 ad 27 mm longo, labiis brevissimis subaequilongis 2,5 ad 3 mm longis; staminibus inter tubi medium et fauces positis; stylo sparse hirtello.

Guatemala: inter San Martin et Las Mercedes; Chimaltenango: Volcan Acatenango, 2600 m; Quezaltenango: inter Quezaltenango et Colombo, 2500 m.

454. S. **excelsa** Benth., in Bot. Reg. 27, 90, 1841 per specim. e seminibus guatemalensibus ab Hartweg missis eductum constituta est; typum in herb. Kew. vidi.

Herba perennis suffruticosa altitudine ad 4 m, ramulis villosulis internodiis sat longis; foliorum laminis 7—12 cm longis, sat tenuibus rotundato-ovatis, breviter acuminatis, in basi rotundatis et saepius ad petiolos 3—5 cm longos abrupte cuneato-angustatis, marginibus crenato-serratis, pagina superiore subglabra, inferiore pallidiore sparse villosula; floribus 1—3 in verticillastris, bracteis 10—15 mm longis sparse villosulis ciliatis caducis subtentis, glomerulis demum inter se 1—2 cm distantibus in racemis gracilibus 15—20 cm longis dispositis; calycibus florentibus extus ad venas sparse villosulis 10 mm longis, labiis brevibus acuminatis

circiter 3 mm longis; corollarum pulchre rubrarum tubo 20 mm longo, intus nudo leniter flexuoso, labia superiore 7 mm alta; staminibus ? ad fauces positis; stylo piloso.

? Guatemala.

455. **S. neovidensis** Benth., Lab. Gen. et Sp. 284, 1833 et in DC., Prodr. 12, 332, 1848 per specim. in Brasiliae prov. Bahia a Princ. Maximiliano Neovidensi lectum constituta est; typum in herb. Bruxell., isotypum in herb. Univ. Goett. vidi.

Herba perennis caulibus sparse pubescentibus; foliorum laminis 5—6 cm longis, 2,5—3,5 cm latis, mollibus, ovatis, in apice acutis vel leniter acuminatis, in basi rotundatis, margine serrulata, pagina superiore brevissime hirtella, inferiore tomentella, petiolis 1—1,5 cm longis elatis; floribus 1—3 in verticillastris bracteis subulatis acutissimis 6—9 mm longis perstatis subtentis, glomerulis inter se 2—4 cm distantibus in spicis interruptis gracilibus 10—15 cm (et ultra) longis dispositis; calycibus florentibus 6,5—8,5 mm longis, hirtellis et glandulis sessilibus conspersis, in maturitate 8—9 mm longis, labia superiore 3,5 mm longa, 5—7-venia, pedicellis 3—4 mm longis gracilibus elatis, corollarum tubo 25—26 mm longo arcuato superne ampliato non ventricoso, labia superiore 4—5 mm alta; staminibus 5—7 mm exsertis.

Although ascribed to Rio Janeiro by Bentham, it would appear from the data on the collection label to have been gathered in Bahia.

Brasilia: ? Bahia.

456. **S. mentiens** Pohl, Pl. Brasil. Ic. 137, t. 193, 1831 per specim. in Brasiliae prov. Rio Janeiro inter frutices ad Serra d'Estrella a Pohl (no. 4719) lectum constituta est; typum in herb. Vindob. vidi.

Herba verisimiliter perennis altitudine 50—60 cm et ultra, ramis superne villosis, foliorum laminis 5—8 cm longis, 2,5—5,5 cm latis, ovatis, acuminatis, in basi rotundatis, petiolis 2—4 cm longis elatis, margine serrato, paginis ambabus glabris; floribus 1—3 in verticillastris bracteis ovato-caudatis 3—5 mm longis caducis, sparse glanduloso-pilosis subtentis, in spicis interruptis laxis 15—25 cm longis dispositis; calycibus maturis 13—14 mm longis, labia superiore recurvo-hiante.

Brasilia: Rio Janeiro: inter Pertininga et Soraia; in umbrosis prope Carvopaco in Serra d'Estrella.

457. **S. fruticetorum** Benth., Lab. Gen. et Sp. 284, 1833 et in DC., Prodr. 12, 331, 1848 per specim. in Brasiliae verisimiliter prov. Bahia prope Arrayal da Conquista a Princ. Max. Neovidensi

lectum constituta est; typum in herb. Mus. Bruxell., isotypum in herb. Kew. vidi.

Frutex ramis hirtellis; foliorum laminis 5—8 cm longis, 2—4 cm latis, ovato-ellipticis, leniter acuminatis, in basi ad petiolum 1,5—3 cm longum hirtellum angustatis, margine serrato, acutis, pagina superiore subglabra, inferiore pubescente; floribus tribus in verticillastris bracteis caducis non visis subtentis, in spicis interruptis 3—6 cm longis pubescentibus dispositis; calycibus florentibus 9 mm longis extus brevissime hirtellis subglabris, in maturitate 13 mm longis, labiis 3.5 mm longis subacutis, superiore 7-venia, inferiore laciniis infra medium connatis; corollarum tubo 32 mm longo intus nudo, labia superiore 6 mm alta, inferiore breviore subtruncata; staminibus breviter exsertis.

Brasilia: Bahia: ad Arrayal da Conquista: Jacobina.

458. **S. tenuiflora** Epl. in Rep. Spec. Nov., Beiheft 85, 125, 1936 per specim. in Brasiliae prov. Sta. Catharina prope Capivary a F. Mueller (no. 446) lectum constituta est; typum in herb. Kew. vidi.

Frutex ut videtur ramulis villosis; foliorum laminis 3 ad 6 cm longis, 2—3,5 cm latis, ovatis, acutis, in basi rotundatis, petiolis pubescentibus 8—15 mm longis elatis, margine serrato, paginis ambabus praecipue inferiore pubescentibus; floribus tribus et ultra in verticillastris bracteis caducis non visis subtentis, glomerulis demum inter se 1—2 cm distantibus in spicis interruptis 10—15 cm longis dispositis; calycibus florentibus extus glanduloso-hirtellis fere glabris 12 mm longis, in maturitate paulo auctis, labia superiore 5-venia rotundata mucronata, inferiore laciniis breviter acuminata infra medium connata, pedicellis 4 ad 5 mm longis elatis; corollarum tubo 38 mm longo, vix 4 mm diametro, superne gradatim longe leniterque ampliato intus nudo, labia superiore 10 mm alta, inferiore paulo breviore.

Brasilia: Santa Catharina: Capivary.

91. Sect. **Secundae.**

Salvia sect. *Calosphace* subsect. *Longiflorae* (partim) Benth. in DC., Prodr. 12, 331, 1848; species typica est *S. secunda*.

Herbae perennes vel frutices saepe rubro-lanati foliis ovatis vel lanceolatis plus minusve villosulis; floribus 3—6 et ultra in verticillastris bracteis modo perstatis modo caducis subtentis, saepius in spicis interruptis strictis rarius in foliorum superiorum axillis dispositis; calycum labia superiore nunc 3-venia nunc 5—7-venia rotundata mucronata; corollarum coccinearum vel rubrarum tubo pro rata incrassato, intus nudo, labiis brevibus

stamina et stylum occlusis, inferiore lacinia media incurvo-concava: staminibus inter tubi medium et fauces positis, jugo inter medium et antheram connexo, gubernaculo integro vel lenissime dentato; styli fere glabri ramo postico longiore.

Plantae mexicanae . . . . 459. *S. Dugesiana*
Plantae peruvianae. . . . . 460. *S. Herrerae*
Plantae brasilianae
Calyces florentes 12—20 mm longi
Labia superior 7-venia . . . . 461. *S. mattogrossensis*
Labia superior 3-venia . . . . 464. *S. splendens*
Calyces florentes 5—8 mm, maturi 6,5 ad 10 mm longi, labia superiore 3—5-venia
Calycum labia superior 3-venis rarius sub-5-venia
Corollarum tubi 11—12 mm longi . 462. *S. melissaeflora*
Corollarum tubi 13—16 mm longi . 463. *S. paranensis*
Calycum labia superior 5-venia
Calyces extus pilis rubris plus minusve ramosis lanati
Calyces florentes 5 mm longi, maturi 6,5—7 mm longi: corollarum tubi 5 mm longi . . . . 465. *S. rufa*
Calyces florentes 6—6,5 mm longi, maturi 8—9 mm longi: corollarum tubi 7—8 mm longi . . . . . . 466. *S. confertiflora*
Calyces extus simpliciter villosi vel hispiduli
Calyces extus hispiduli in maturitate 7 mm longi; corollarum tubi 7 ad 8 mm longi . . . . 468. *S. occlusa*
Calyces extus villosi in maturitate 9—10 mm longi: corollarum tubi 9—10 mm longi . . . . 467. *S. secunda*

459. **S. Dugesiana** Epling sp. nov. per specim. in Mexico prov. Guanajuato in montibus a Duges lectum constituta est: typum in herb. Gray. vidi.

Suffrutex ut videtur ramulis villosis et inter flores pilis extensis longioribus glandulosis viscidis; foliorum laminis 10—13 cm longis, ovatis, in apice acutis, in basi rotundatis, margine crenato-serrato, paginis ambabus plus minusve villosis, praesertim subtus ad venas, petiolis 3—5 cm longis elatis; floribus circiter 6 in verticillastris bracteis caducis subtentis in spicis interruptis laxis elongatis dispositis, pedicellis 8—10 mm longis elatis, calycibus florentibus rubris 13—14 mm longis, extus pilis extensis glandulosis vestitis,

labiis acuminatis, superiore 7-venia; corollarum coccinearum tubo sat amplo 23 mm longo, labia superiore 8—9 mm alta, inferiore subaequilonga; stylo sparse hirtello.

As nearly as one may ascertain, the lower lip of the corolla is incurved; the corollas available, however, may not be mature. The association here therefor is only tentative.

Mexico: Guanajuato.

460. **S. Herrerae** Epl. in Rep. Spec. Nov., Beiheft **85**, 93, 1935 per specim. in Peruviae prov. Cuzco prope Machupicchu a Herrera (no. 3207) lectum constituta est: typum in herb. Univ. Calif. (Los Angeles) vidi.

Frutex laete viridis ramulis fere glabris pilis paucis flavidis conspersis; foliorum laminis 5—11 cm longis, 2—3,5 cm latis, lanceolatis, leniter acuminatis, in basi rotundatis et ad petiolos 3—5 mm longos angustatis, margine serrato, paginis ambabus fere glabris pilis paucis flavidis conspersis; floribus 3—6 in spicis interruptis rarius in foliorum axillis dispositis; calycibus florentibus 8—10 mm longis laete viridibus sparse flavido-hirsutis, labiis 4 mm longis, superiore acuminata, inferiore laciniis acuminatis ad basim connatis, in maturitate paulo auctis, corollarum tubo 13 mm longo sat crasso subventricoso intus nudo, labia superiore vix 4 mm alta; staminum filamentis 2 mm longis, jugo 6,5 mm longo paulo supra tubi medium connexo, gubernaculo 4,5 mm longo; stylo villoso.

Peruvia: in valle Urubamba prope Cedrobamba, 2200 m: prope Machupicchu.

461. **S. mattogrossensis** Pilger in Engl. Bot. Jahrb. **30**, 188, 1901 per specim. in Brasiliae prov. Matto Grosso ad cursum superiorem fluminis Kulisehu a Pilger (no. 745) lectum constituta est; typum in herb. Mus. Berolin. vidi.

Frutex altitudine ad 2 m ramulis superne appresso-pubescentibus; foliorum laminis coriaceis in siccis duris, 8—12 cm longis, 3,5—5,5 cm latis, ovato-ellipticis, obtusiusculis, in basi angustatis, margine crenato-serrato, pagina superiore scabrida, in siccis bullata, inferiore pubescente venis reticulatis prominulis, petiolis 0,5—1 cm longis pubescentibus elatis; floribus tribus in verticillastris, bracteis tarde deciduis lanceolato-subulatis pubescentibus 5—10 mm longis subtentis, glomerulis demum inter se 0,5—2 cm distantibus, in spicis interruptis 8—10 cm longis dispositis; calycibus florentibus 12—13 mm longis, labia superiore acuta 7-venia, inferiore laciniis acuminatis in maturitate 15 mm longis; corollarum tubo 20—22 mm longo, labia superiore 5 ad 5,5 mm alta, inferiore paulo breviore; staminum filamentis 3,5 mm

longis, jugo 11—12 mm longo, gubernaculo 7 mm longo ad connexum in dentem obscurum dilatato; stylo villoso.

Brasilia: Matto Grosso: in regione cursus superioris fluminis Kulisehu; Bananalsinho affl. do Paranaltingo.

462. **S. melissaeflora** Benth. in DC., Prodr. 12, 331, 1848 per specim. in Brasiliae prov.? São Paulo a Sellow (no. 4332) lectum constituta est; typum in herb. Kew., isotypum in herb. Mus. Berolin. vidi.

Herba perennis altitudine 50—60 cm et ultra, caulibus gracilibus glabratis superne villosulis; foliorum tenuium laminis vel lanceolatis vel anguste ovatis 5—8 cm longis, 2—2,5 cm latis, in apice longe leniter acuminatis, in basi rotundato-angustatis, margine serrulato, paginis ambabus fere glabris; floribus 3—6 in verticillastris bracteis ovato-acuminatis deciduis 3—4 mm longis subtentis, glomerulis inter se 1—2 cm distantibus in spicis interruptis angustis villosulis 12—20 cm longis dispositis; calycibus florentibus ad venas pilis extensis sparse vestitis, interdum glabris, 5—6 mm longis, in maturitate 7,5—8 mm longis, labia superiore rotundato-mucronata recurvo-erecta 3-venia, inferiore laciniis breviter acuminatis; corollarum tubo 11—12 mm longo: staminibus ad fauces positis, filamentis 1 mm longis, jugo 4,5—5 mm longo supra medium connexo, gubernaculo 3 mm longo; stylo fere glabro.

Brasilia: São Paulo: inter Osasco et Butantan; Santa Catharina: in campo de Temestes.

463. **S. paranensis** Dusén in Ark. f. Bot. Stockh. 9, 15, 10, 1910 per specim. in Brasiliae prov. Paraná a Dusén lectum constituta est; typum in herb. Mus. Stockh. vidi.

Herba perennis altitudine ad 80 cm caulibus plus minusve villosulis; foliorum laminis sat tenuibus 6—13 cm longis, 2,5 ad 4,5 cm latis, ovato-lanceolatis vel ovatis, in apice acutis, in basi vel rotundatis vel angustatis, petiolis 1—2,5 cm longis villosulis elatis, margine serrato, pagina superiore sparse hirtella fere glabra, inferiore ad venas villosula; floribus 3—6 in verticillastris bracteis tarde deciduis ovato-acuminatis villosulis 4—6 mm longis subtentis, glomerulis demum inter se 0,5—1 cm distantibus, in spicis interruptis villosis 10—12 cm longis dispositis; calycibus florentibus ad venas pilis extensis sparse vestitis, 6—7 mm longis, labia superiore rotundato-mucronata 3-venia, inferiore laciniis acuminatis infra medium connatis in maturitate 7—10 mm longis, labia superiore recurvo-erecta; corollarum tubo 13—16 mm longo: staminibus ad fauces positis, filamentis 1,2 mm longis, jugo 6 mm longo supra medium connexo, gubernaculo 3,5 mm longo; stylo sparse piloso.

Brasilia: Paraná: ad Lapa in silvula; Serrinha ad marginem silvulae; Jaguariahyva ad marginem silvulae; Roca Nova ad marginem silvulae; Curityba; Itaperussu in silvula 880 m; inter Marechal Mallst et Darizon; Iraty in fruticetis; Sta. Catharina: no mato dos pinheiros azima da Serra Geral.

464. **S. splendens** Sellow ex Roem. et Schultes, Syst., Mant. 1, 185, 1822 per specim. in Brasiliae prov. Rio Janeiro a Sellow lectum constituta est; specimina certa in herb. Mus. Berolin. vidi. — *S. splendens* Sellow ex Nees in Neuwied, Reise Bras. 2, 335. 1820 (nomen). — *S. splendens* Ker-Gawl. in Bot. Reg. t. 687, 1823 per spec. hort. constituta est; typum non vidi. — *S. brasiliensis* Spreng., Syst. 1. 56. 1825 per specim. in Brasilia a Sellow lectum constituta est: typum non reperire potui. — *Fenixanthes splendens* Raf., Autikron Botanikon 112, 1840 (fide Pennell).

Herba perennis suffruticosa speciosa pulcherrima altitudine ad 1 m et ultra, ramis ad apices pubescentibus caeterum glabris; foliorum laminis laete viridibus 4—8 cm longis, 2—5 cm latis, ovatis, acuminatis, in basi pulchre rotundatis, margine leniter serrato, paginis ambabus glabris, petiolis 1—4 cm longis elatis; floribus 1—3 in verticillastris bracteis amplis summe coccineis ovato-acuminatis 10—20 mm longis caducis subtentis, glomerulis demum inter se 1—3 cm distantibus, in spicis interruptis speciosissimis dispositis; calycibus florentibus membranaceis subinflatis amplis ad venas hirsutis, pulchre et summe coccineis 15—20 mm longis, in maturitate paulo auctis campanulatis, labiis 7—9 mm longis, superiore et inferiore laciniis breviter acuminatis, pedicellis 5—6 mm longis villosis elatis; corollarum tubo 30—40 mm longo superne gradatim ampliato intus nudo, labia superiore 8—9 mm alta, inferiore subaequilonga; staminum filamentis 6,5—7 mm longis, jugo 17—18 mm longo ad medium connexo, gubernaculo 10 mm longo; stylo glabro.

Brasilia: Rio Janeiro: Alto de Governador; in fruticetis ad litus Cabo Cabana; in umbrosis juxta Tijuca; in umbrosis montanis prope Petropolis, 2000—3000 m; in sylvis ad Guaxindiba prope Rio Janeiro. — São Paulo: prope Mogi-merim. — Paraná: prope Marretes ad marginem fruticeti.

465. **S. rufa** Epl. in Rep. Spec. Nov., Beiheft 85. 94. 1935 per specim. in Brasiliae prov. Rio Janeiro prope Tamarati a Sellow (no. 2233) lectum constituta est: typum in herb. Mus. Berolin., isotypum in herb. Univ. Calif. (Los Angeles) vidi.

Suffrutex ramis superne rubro-tomentellis mox glabris; foliorum laminis 8—12 cm longis, 3—5 cm latis, ovatis, leniter acuminatis, in basi ad petiolos 0,5—3,5 cm longos cuneato-angustatis interdum acuminatis, margine crenato-serrato, pagina superiore

sparse hirsuta, inferiore molliter incano-tomentosa; floribus 6—12 in verticillastris bracteis ovato-caudatis 4—8 mm longis extus rubro-tomentosis subperstatis subtentis, glomerulis demum inter se 1—1,5 mm distantibus in spicis interruptis strictis 15—25 cm longis approximatis; calycibus florentibus 5 mm longis, extus pilis plus minusve ramosis rubro-lanatis, in maturitate 6.5—7 mm longis, labiis 1,5 mm longis, superiore obtusa, inferiore laciniis breviter acuminatis infra medium connatis, pedicellis 1,5—2 mm longis elatis: corollarum tubo 5 mm longo intus nudo labiis 1,5 mm longis fere clausis; staminum filamento vix 1 mm longo, jugo 2,5 mm longo inter medium et antheram connexo, gubernaculo 1,5 mm longo; stylo glabro.

Habitu similis *S. confertiflorae* est floribus minoribus tamen differt.

Brasilia: prov. Rio Janeiro prope Tamarati.

466. **S. confertiflora** Pohl, Pl. Bras. Ic. 2, 134, t. 190, 1831 per specim. in Brasiliae prov. Rio Janeiro inter frutices ad Padre Correa a Pohl (no. 59) lectum constituta est; typum in herb. Mus. Vindob. vidi.

Suffrutex speciosus altitudine ad 1,5 m ramis rubro-tomentellis mox glabris: foliorum laminis 6—12 cm longis, 3—6 mm latis, ovatis, leniter acuminatis, in basi ad petiolos tomentosos 1—3 cm longos cuneato-angustatis, margine crenato-serrato, pagina superiore sparse hirsuta, inferiore molliter incano-tomentosa; floribus 6—12 in verticillastris bracteis ovato-caudatis 4—8 mm longis extus rubro-tomentosis perstatis subtentis, glomerulis inter se 1—2 cm distantibus, in spicas interruptas strictas graciles 15 ad 30 cm longas approximatis; calycibus florentibus extus pilis plus minusve ramosis dense tomentosis, saepius pulchre rubris, 6 ad 6,5 mm longis, in maturitate 8—9 mm longis, labiis 2,5 ad 3.5 mm longis, superiore obtusa, inferiore laciniis breviter acuminatis infra medium connatis, pedicellis 4—6 mm longis elatis; corollarum intus rubellarum, extus saepe flavidarum, lana aurea vestitarum, tubo 7—8 mm longo, intus nudo, labiis 1.5—2 mm longis, fere clausis; staminibus inter tubi medium et fauces positis; filamentis 1,2 mm longis, jugo 3,5 mm longo inter medium et antheram connexo. gubernaculo 2—2,2 mm longo; stylo glabro.

Brasilia: Rio Janeiro: inter frutices ad Padre Correa; in Serra d'Estrella; in Serra dos Orgãos ad ripas rivuli Imbaby; Petropolis.

The following have been determined by me as *S. confertiflora*. Amongst them may be found confused some specimens of *S. rufa*: In Serra dos Orgãos, Miers; prope Petropolis, 18. II. 1866, Glaziou 2649; in umbrosis montanis prope Petropolis, 2000 ad

3000 ped.. 1882. Ball; in Serra dos Orgãos, Wilkes Exped.; ad Theresopolis, I. 1896, Ule 4345; prope Theresopolis I, 1887, Moura 558, 560.

467. **S. secunda** Benth., Lab. Gen. et Sp. 285, 1833 et in DC.. Prodr. 12, 311. 1848 per specim. in Brasiliae prov. Minas Geraes ad Matheus Lemes a Sellow (no. 1462) lectum constituta est: typum in herb. Mus. Berolin., isotypum in herb. Univ. Calif. (Los Angeles) vidi.

Frutex ut videtur ramis pilis subcrispule retrorsis villosis mox glabris; foliorum laminis 6—12 cm longis, 2—5 cm latis, ovato-ellipticis, in apice acutis vel breviter acuminatis, in basi rotundo-angustatis vel cuneatis, margine serrulato, pagina superiore sparse hirtella, inferiore ad venas villosa interdum tomentosa, petiolis 1—3 cm longis elatis; floribus 6—12 in verticillastris bracteis ovato-acuminatis 6—12 mm longis subperstatis villosis subtentis, glomerulis inter se 0,5—1 cm distantibus, in spicas interruptas strictas virgatas angustas 25—30 cm longas villosas subsecundas approximatis; calycibus florentibus 7—8 mm longis, extus saepe pilis longioribus villosis, pedicellis 3—4 mm longis elatis, in maturitate 9—10 mm longis, labiis 3,5—4,5 mm longis, superiore rotundata recurvo-erecta, inferiore laciniis acutis ad basim connatis; corollarum coccinearum tubo 9—10 mm longo, intus nudo. labiis 2—2,5 mm longis; staminibus supra tubi medium positis. filamento 1 mm longo, jugo 3,5—4 mm longo inter medium et antheram connexo, gubernaculo 2,5 mm longo; stylo glabro.

Brasilia: Minas Geraes: ad Matheus Lemes; ad Fazenda do Diamante prope Corinto: São Paulo: ad Franca; Butantan.

468. **S. occlusa** Epl. in Rep. Spec. Nov., Beiheft 85, 95, 1935 per specim. in Brasiliae prov. São Paulo prope S. Jose ad Canoa Verde a Regnell (no. III, 932) lectum constituta est; typum in herb. Mus. Stockh., isotypum in herb. Mus. Par. vidi. — *S. secunda* var. *tomentella* Benth., Lab. Gen. et Sp. 723, 1835 per specim. in Brasiliae prov. Minas Geraes in Serro Frio a Vauthier (no. 408) lectum constituta est; typum verum non reperire potui; isotypos in herb. Mus. Par., Delessert., DC. et Vindob. vidi.

Frutex altitudine ad 2 m ramis fere glabris superne sparse villosulis; foliorum laminis sat tenuibus 6—8 cm longis. 2—7 cm latis, vel ellipticis vel elliptico-lanceolatis. utrimque acutis vel leniter acuminatis, petiolis 1—3 cm longis elatis. margine serrato. pagina superiore saepius hirtella, inferiore vel glabra vel molliter pubescente subtomentella; floribus 3—6 in verticillastris bracteis ovato-acuminatis 3—8 mm longis glabris vel hirtellis subperstatis subtentis, glomerulis demum inter se 5—10 mm distantibus, in spicas interruptas strictas angustas 10—30 cm longas saepe

secundas approximatis; calycibus florentibus 6—7 mm longis, extus hispidulis, in maturitate 7 mm longis, labiis vix 2 mm longis, superiore obtusa, inferiore laciniis acutis, infra medium connatis, pedicellis 3—4 mm longis elatis; corollarum coccinearum tubo 7—8 mm longo, intus nudo, labiis 1,5 mm longis, fere clausis; staminibus supra tubi medium positis, filamento 1 mm longo, jugo 3 mm longo inter medium et antheram connexo, gubernaculo 2 mm longo: stylo glabro.

Brasilia: Rio Janeiro: in Serra do Picu; São Paulo: prope Cajuru: inter Retiro et Servo: S. Jose prope Canoa Verde; ad San Carlos do Pinhal: Minas Geraes: Capao; Lagoa Santa: Haite; Santa Luzia ad Diamantina: Serra do Frio; Bello Horizonte; Lavras.

Nomina dubia inquirenda et mihi ignota.

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Exsiccata.

André 446 (104), 659 (114), 760 (345), 947 (305), 1791 (434), 2190 (445), 2450 (4), 2619 (436), 3072 (300), 3175 (105), 3557 (18), 3663 (103), 3664 (144), 3966 (57), 3974 (134), 4011 (147), 4049 (113), 4339 (140). — Andrieux 143 (380), 144 (387), 146 (117), 147 (295), 148 (354a), 149 (270), 150 (198), 151 (21), 252 (21), 262 (21), 450 (126), 487 (380). — Anisits 1910 (231), 1963 (227). — Anthony 252 (113), 294 (199). — Anthony et Tate 213 (435), 260 (445). — Apollinaire, Fr. et Arthur 25 (345), 91 (345). — Archer 482 (113), 671 (4), 1004 (4), 1106 (114), 1282 (420), 1514 (421). — Ariste-Joseph, Fr. A 61 (298), 524 (345), A 758 (138), 861 (345), 1056 (171). — Arsène, Fr. 24 (278), 25 (51), 112 (206), 215 (71), 372 (278), 385 (222), 395 (360), 439 (245), 463 (245).

677 (437), 831 (41), 832 (450), 1090 (71), 1196 (278), 1421 (71), 1559 (71), 1565 (1), 1710 (224), 1745 (363), 1788 (174), 2088 (174), 2110 (363), 2205 (363), 2253 (1), 2418 (4), 2440 (282), 2454 (27), 2459 (79), 2543 (442), 2553 (71), 2602 (442), 2779 (174), 2781 (51), 2809 (354 A), 2814 (442), 2837 (45), 2839 (354 A), 2854 (359), 2888 (245), 2950 (442), 3112 (41), 3123 (354 A), 3124 (278), 3125 (334), 3126 (442), 3178 (450), 3198 (302), 3204 (41), 3251 (363), 3331 (334), 3367 (442), 3505 (45), 3517 (41), 3600 (1), 3632 (354 A), 5297 (442), 5396 (79), 5506 (71), 5553 (71), 5560 (51), 5592 (245), 5671 (363), 5734 (448), 5821 (129), 5933 (278), 6000 (178), 6652 (71), 6730 (366), 6746 (362), 6755 (282), 6788 (354 A), 6944 (245), 7376 (334), 8452 (282), 8453 (366), 8494 (127), 9002 (174), 9006 (189), 9019 (4), 9044 (362), 10162 (72), 10557 (278), 10558 (305). — Arsène, Fr. et Benedict 15810 (127), 17493 (127). — Asplund 5873 (12), 5874 (12). — Agniel, Fr. 10556 (218), 10614 (354). — Baker 21 (131), 130 (2), 679 (127), 1457 (94). — Bailey 372 (379), 729 (329). — Balansa 987 (241), 989 (227), 990 (231), 991 (385), 1156 (166). — Bang 37 (154), 310 (307), 422 (155), 980 (17), 1059 (177), 1909 (410), 2032 (250), 2033 (154), 2543 (17). — Barnes et Land 1 (38), 184 (34), 286 (442), 321 (304), 360 (354 A), 361 (366), 484 (302), 496 (258), 641 (442). — Bartlett 10350 (303), 10504 (363 a), 10688 (167), 10785 (273), 10915 (363 A), 12370 (167). — Benke 1365 (127), 2502 (244), 2514 (127), 5419 (167), 5422 (10), 5645 (127). — Berlandier 15 (3), 95 (3), 441 (94), 607 (261), 635 (261), 685 (354), 697 (224), 716 (425), 776 (224), 788 (224), 809 (224), 821 (10), 839 (224), 994 (381), 1002 (278), 1245 (174), 1277 (127), 1319 (174), 1654 (242), 2144 (167), 2241 (10), 2335 (167), 3186 (10), 3187 (10). — Bernoulli 129 (305), 149 (178), 154 (442), 178 (187), 751 (245), 1211 (178), 2102 (305), 2103 (205), 2121 (442), 2122 (187). — Bernoulli et Cario 472 (2), 2064 (73 A), 2068 (225), 2071 (390), 2072 (293), 2073 (453), 2077 (178), 2080 (442), 2081 (225), 2092 (189), 2094 (168), 2102 (305), 2103 (305), 2110 (178), 2112 (73 a), 2113 (278), 2115 (278), 2117 (278), 2118 (225), 2121 (442), 2122 (187), 2132 (118), 2139 (4). — Bilimek 303 (224), 304 (224), 306 (261), 308 (354), 315 (278), 316 (278). — Biltmore Herb. 1385 (61), 3424 (244), 9261 (244). — Blanchet 269 (167), 3858 (457), 3859 (166). — Blumer 76 (29), 1741 (29), 1762 (363 b), 2080 (29), 3254 (62), 3318 (62). — Bornmüller 99 (233), 112 (385), 209 (233), 244 (86), 411 (233). — Botteri 610 (4), 627 (305), 633 (178), 634 (278), 639 (336), 640 (331), 641 (305), 643 (442), 651 (4), 793 (175), 795 (448), 1098 (131), 1168 (360). — Bourgeau 122 (305), 125 (224, 245), 126 (354 a), 295 (218), 394 (448), 396 (71), 490 (129), 619 (354), 837 (261), 853 (387), 854 (278), 855 (195), 856 (363 a), 859 (38, 278).

860 (69), 990 (174), 992 (359), 993 (354), 1106 (366, 387), 1109 (131), 1110 (41), 1111 (174), 1237 (381), 1239 (4), 1241 (278), 1243 (301), 1244 (442), 1504 (2), 1504 (3), 1587 (178), 2251 (336), 2306 (167), 2857 (336), 3162 (442), 3215 (190), 3216 (331), 3306 (131). — Brace 272 (94), 1750 (94), 4139 (91), 4400 (91), 4865 (91). — Brade 2068 (305), 2152 (178), 5188 (232), 6004 (370), 6746 (462), 7007 (402), 7008 (392). — Brade et Tamandare 6365 (462), 6417 (376), 6418 (265), 6420 (323), 6421 (323), 15566 (326). — Brenning 173 (2), 210 (2). — Britton 252 (91), 273 (429), 1005 (94), 2519 (167), 4013 (4), 6373 (94). — Britton et Fishlock 994 (91). — Britton et Hazen 5 (2). — Britton et Millspaugh 2241 (91), 2362 (94), 2909 (91), 5460 (94). — Broadway 53 (2), 3546 (2), 4511 (2). — Brown 12 (3), 168 (94), 491 (91). — Brown et Britton 145 (91), 148 (167), 976 (91), 1052 (91). — Bruch 104 (12), 106 (254). — Buch 132 (94), 449 (292), 658 (123), 1109 (290), 1145 (125), 2089 (320), 2148 (320). — Buchtien 175 (154), 283 (307), 603 (167), 756 (154), 3883 (167), 3908 (406), 5875 (307), 5877 (154). — Burchell 597 (449), 2737 (464), 2764 (86), 2775 (167), 2976-3 (464), 5116 (232), 5460 (468), 5468 (232), 5902 (449), 5974-2 (449), 6029 (449), 6120 (449), 7365 (449). — Bush 156 (244), 452 (244), 625 (242), 626 (244), 1155 (244), 1269 (10), 3254 (244), 6483 (244), 8792 (127), 9708 (244), 11554 (244), 12272 (244). — Cabrera 1583 (86), 2082 (82). — Calderon 311 (189), 475 (442), 527 (131), 1362 (279), 1412 (442), 1944 (279), 2282 (189), 2284 (2), 2410 (442), 2436 (305), 2437 (189), 2459 (267). Campos Novaes 909 (402), 910 (167). — Claussen 27 (456), 87 (402), 92 (377), 572 (402), 576 (402), 1030 (82a), 1031 (468), 1033 (402), 1034 (449), 1055 (236), 1085 (402), 1396 (236), 1397 (236), 1460 (375), 1630 (82). — Clemens 294 (10), 295 (10), 296 (127), 11756 (244). — Collins, G. N. 21 (380), 23 (361a). — Collins et Doyle 62 (267), 185 (190, 212 (390), 213 (266). — Conzatti 163 (363), 708 (67), 902 (21), 922 (450), 1351 (441), 1506 (132), 1554 (367), 1562 (21), 1569 (442), 1857 (21, 198), 1940 (367), 2059 (270), 2060 (380), 2094 (397), 2095 (41), 2096 (354), 2155 (21), 2156 (132), 2276 (442), 2296 (173), 3856 (224), 3861 (50), 3873 (216), 4107 (441), 4187 (117), 4202 (270), 4235 (216), 4285 (198), 4292 (198), 4316 (218), 4343 (50), 4994 (270), 4995 (64). Conzatti et Gonzales 900 (3671), 903 (215), 1035 (295), 1036 (74), 1048 (442), 1049 (92). — Cook et Gilbert 346 (113), 375 (201), 376 (201), 398 (142), 775 (410), 873 (308), 901 (308), 928 (21), 1209 (410), 1210 (142). — J. P. Cooper 8 (279), 58 (116), 86 (2). — Cooper, J. J. 5895 (116), 5901 (2), 5902 (279), 5903 (279). — Cory 6064 (242), 6859 (206), 7203 (204), 7206 (62), 7207 (379), 7338 (204), 8427 (242), 8590 (242). — Coulter 1087 (393), 1088 (425),

1089 (425), 1090 (440), 1093 (363), 1097 (174), 1099 (379), 1100 (354), 1101 (354), 1102 (119), 1110 (305), 1111 (245), 1112 (68), 1113 (71), 1115 (70, 71), 1116 (33), 1117 (10), 1118 (1), 1120 (25), 1294 (1). — Craig, T. 756 (4). — Cuming 137 (253), 943 (99), 1034 (2), 1042 (141). — Curtiss 19 (2), 474 (5), 550 (4), 553 (94a), 2030 (244), 2032 (2, 5, 94), 2035 (167), 4844 (167), 5276 (244), 5621 (91), 6621 (5), 6782 (61). — Cuthbert 227 (61), 639 (61), 1428 (94). — Deam 106 (331), 124 (366), 139 (363), 1686 (167). — Dombey 270 (399), 271 (11), 272 (365), 273 (156), 274 (110), 275 (141), 276 (143), 277 (54), 280 (410). — Drummond 272 (242), 273 (242). — Duges 19 (363a), 55 (129), 223 (278), 226 (379). — Dusén 222 (376), 228 (323), 234 (265), 305 (323), 399 (324), 2000 (324), 2311 (85), 2360 (85), 2737 (464), 3083 (463), 3218 (86), 3308 (82), 4055 (85), 6794 (85), 7126 (85), 7346 (463), 7362 (463), 7700 (232), 7784 (463), 7816 (463), 7820 (385), 8445 (167), 8608 (232), 9281 (86), 9283 (83), 9286 (401), 13406 (85), 13422 (464), 15633 (85), 17003 (463), 17941 (385). — Duss 1218 (355), 2160 (91). — Earle 63 (244), 251 (127), 375 (242). — Eastwood 49 (127), 15418 (127). — Eggers 91 (167), 92 (91), 281 (2), 892 (2), 2594 (163), 3973 (91), 4408 (91), 5278 (94), 6984 (355), 7227 (2), 13138 (329), 13414 (271), 15053 (342). — Eggleston 10835 (363b), 10860 (363b), 12111 (244), 14583 (127), 14963 (127), 16703 (242), 17328 (127). — Ehrenberg 103 (119), 110 (214), 121 (281), 297 (88). — Ekman 67 (94), 1003 (288), 1055 (288), 1328 (320), 1503 (122), 1510 (124), 1571 (161), 1614 (125), 1627 (87), 1771 (320), 1831 (230), 1832 (82), 1834 (82), 1835 (234), 1836 (241), 1842 (385), 1874 (320), 2114 (157), 2307 (157), 2415 (289), 3077 (125), 3089 (427), 3115 (161), 3155 (125), 3168 (165), 3476 (120), 3585 (89), 4311 (193), 4312 (283), 4924 (123), 4940 (287), 4953 (162), 5004 (162), 5027 (192), 5047 (162), 5048 (192), 5062 (287), 5086 (162), 5087 (162), 5277 (158), 5417 (158), 5536 (158), 5767 (157), 6274 (89), 6797 (163), 6860 (87), 6916 (94), 7123 (4), 7395 (122), 7621 (165), 7737 (161), 7751 (87), 7799 (161), 7857 (120), 8040 (4), 8252 (292), 8323 (292), 8421 (162), 8461 (4), 8657 (285), 9030 (157), 9230 (211), 9313 (124), 9317 (124), 9332 (286), 9445 (286), 9484 (157), 9742 (193), 9743 (283), 10109 (4), 10249 (210), 10549 (210), 10875 (4), 11740 (122), 11922 (87), 13104 (89), 13150 (284), 13375 (89), 13547 (164), 13569 (160), 13625 (159), 13638 (2), 13671 (160), 13692 (122), 13873 (87), 13913 (87), 13947 (159), 13963 (291), 14080 (167), 14482 (158), 15958 (157), 15972 (157). — Endres 30 (305), 66 (178), 260 (350). — Fendler 178 (29), 224 (94), 227 (2), 558 (2), 567 (167), 606 (127), 608 (29), 873 (271), 874 (167), 875 (305), 876 (328, 329), 877 (4), 878 (2), 893 (178). — Ferris et Duncan 2564 (62), 2764

(379), 2882 (242), 3472 (127). — Ferris et Mexia 5111 (5). — Fiebrig 145 (233). 268 (232, 233), 293 (227), 815 (227). 4944 (227). 5362 (166). 5710 (234), 5726 (385), 6159 (233), 6494 (234). — Firmin 102 (113), 243 (435a). — Fisher 102 (363), 183 (69). 313 (38), 334 (224), 335 (336), 348 (69). — Fisher, G. L. 32303 (204). — Fredholm 3028 (94), 5644 (94), 6400 (5). — Fries 847 (12), 1198 (253), 1204 (307), 1282 (386), 1378 (227). — Fröderstrom et Hultén 16 (33), 127 (335), 192 (335), 237 (278), 238 (366), 239 (36), 240 (278). 241 (174), 242 (174), 243 (278), 244 (278), 310 (45), 311 (278), 312 (41). 314 (354a), 361a (174), 362 (33), 409 (354a), 476 (4), 488 (4). 619 (335), 620 (50), 648 (178). 976 (4), 1010 (78), 1121 (278), 1217 (278). — Fuertes 579 (2), 1870 (122). — Funck 117 (329), 278 (327), 280 (109), 440 (178). — Galeotti 117 (329), 278 (327), 610 (336), 611 (167). 612 (331). 618 (442), 627 (131), 629 (178), 630 (442), 634 (77). 639 (92), 641 (24), 642 (395), 643 (360), 644 (132), 645 (388), 646 (68). 648 (295). 649 (74), 650 (451), 651 (117), 652 (224), 654 (41), 655 (173), 656 (278), 657 (167), 658 (184), 660 (247), 661 (167), 663 (442), 664 (178), 667 (132), 668 (224), 680 (305), 683 (294), 684 (257), 685 (173), 687 (119), 688 (119), 691 (79), 694 (245), 695 (245), 702 (174), 704 (379), 706 (334), 712 (50), 713 (336), 714 (182), 715 (363), 716 (295), 717 (450). 719 (117). 719 E (331), 719 G (270). 719 I (1), 719 K (173), 719 M (41), 1840 (74). — Gardner 577 (373), 578 (322), 579 (466), 580 (371), 3930 (249), 4305 (402). 5073 (370), 5074 (449), 5075 (449). 5570 (167), 5571 (464), 5827 (377). 5828 (322). — Gaudichaud 70 (403), 85 (2), 230 (82a). 289 (85), 294 (462), 297 (462), 299 (232), 453 (464), 579 (82), 583 (234), 584 (86), 585 (86), 586 (86), 588 (86), 592 (241), 593 (385), 595 (241), 598 (82), 599 (228). — Gaumer 60 (94). 394 (4), 459 (4). 1333 (95), 1434 (4), 1443 (94), 1703 (2), 1773 (167). 2317 (95). 2391 (4), 23506 (3). 23519 (95), 23559 (94), 23560 (167), 24056 (94). — Gehrt 3164 (232), 3266 (468). — Gentry 1083 A (180), 1118 (6), 1180 (180), 1273 (47), 1342 (180), 1373 (47), 1387 (20). 1400 (174). 1695 (47), 1702 (354), 1726 (20), 1751 (174), 1754 (40). 1917 (131), 1968 (174), 1987 (305), 2405 (333), 2478 (20), 2508 (333), 2561 (333), 2744 (305). — Ghiesbreght 70 (118), 72 (173). 122 (390), 124 (381), 128 (442), 129 (277), 738 (? 41), 741 (41), 742 (294), 743 (277), 745 (190), 747 (? 41). 749 (452), 750 (247). 751 (245), 753 (368), 754 (118), 755 (390). 756 (260), 757 (173). 758 (391). 759 (115). 760 (383), 765 (132), 1842 (257). — Gilbert 64 (86). 68 (86), 321 (86), 324 (82). — Glaziou 2649 (466), 2890 (373), 3708 (371), 3709 (322), 3710 (373), 4155 (371). 4892 (376). 4966 (167). 5954 (464). 6650 (385), 8825 (323), 11309 (377), 11316 (376), 13048 (232), 15278 (370), 15279 (375), 15280 (82322),

16280 (402). 16281 (322). 16316a (468), 17233 (371), 18387 (371), 18388 (402). 18388a (236), 19683 (468), 21926 (449), 21927 (402), 21930 (235). — Goldman 137 (9), 193 (27), 205 (354a), 206 (174A). 212 (363b), 214 (20), 340 (310). 459 (4), 687 (336), 815 (442), 823 (133), 896 (346). 955 (118), 1501 (8), 2360 (9), 2383 (9). 2391 (9), 2402 (9). — Goodding 204 (62), 768 (363b), 872 (62). 1001 (9), 2158 (366), 2177 (174), 2410 (363b). — Goudot 2 (444). 9 (443), 1844 (300). — Graham 86 (387), 87 (174), 88 (224). 89 (448), 90 (33). 92 (278). 93 (354), 94 (354), 95 (119). 96 (334, 450). 97 (440), 99 (33), 100 (245), 101 (245). 102 (71). 109 (129). — Greenman 26 (3), 148 (2), 211 (178). 498 (336). 4421 (244). — Gregg, H. R. 62 (244). — Gregg. J. 335 (206). 541 (127). 542 (305). — Griffiths 6776 (29). 6777 (29). 7155 (29). — Groth. H. A. 101 (10), 112 (127). 115 (242). — Guillemin 894 (373), 950 (375). — Hahn, L. 110 (2), 377 (381). 398 (381). — Hahn, M. 1287 (2). — Hammarlund 350 (252), 351 (? 12). — Hanson, H. C. 437 (10). 446 (242), 666 (206). — Harper, R. M. 223 (61), 1705 (244). — Harris 6262 (131), 7327 (429), 8213 (3), 12429 (428), 12644 (167). 12787 (430). — Harrison 1979 (127), 4815 (127), 4855 (127). 6146 (9), 6601 (9), 8156 (29). — Harshberger 122 (69), 142 (69), 222 (354a). — Hartman 43 (23), 312 (174A), 323 (180), 738 (363b), 744 (128). 749 (305), 776 (29), 907 (23). — Hartweg 159 (305), 160 (29), 161 (442), 162 (174), 163 (245), 164 (218), 165 (379). 168 (79), 171 (42), 293 (379), 373 (381). 374 (214). 375 (278. 281), 376 (368), 500 (1). 504 (117), 505 (388). 506 (1). 556 (392). 557 (278), 558 (391), 559 (368). 609 (73a). 685 (2). 805 (248). 806 (113). 1324 (443), 1325 (171). 1326 (420). 1327 (170). 1328 (134). 1329 (435). 1330 (105). 1331 (112), 1340 (368), 1347 (209), 1618 (127). — Hassler 109 (227), 651 (385), 657 (230), 658 (230), 660 (385), 1047 (227). 1640 (232), 2566 (227), 3117 (227), 3220 (232). 3766 (227), 4118 (232), 4280 (235), 4294 (234), 4531 (231). 4722 (85), 4725 (231), 4731 (85), 4805 (235), 5015 (85), 5145 (385). 5227 (85), 5762 (234), 5846 (? 85), 5979 (85). 6243 (231), 6335 (227). 6469 (385), 6886 (227), 6973 (227), 7002 (231), 7019 (234), 8761 (232), 8894 (? 85), 9121 (235), 9237 (231), 9358 (385), 9823 (233). 10183 (233). 11215 (230). 11876 (166), 12432 (227). — Havard 10 (3), 26 (62), 30 (131). 35 (379). — Hazen 9676 (444, 445). — Heller 384 (2). 1381 (10). 1617 (242). 1652 (127). 2171 (143). 4280 (244). 13978 (127). — Heller, E. C. 43 (71). — Herrera 357 (143). 1062 (99). 1491 (60). 1556 (460). 2087 (142), 3034 (201), 3041 (143). 3207 (460). 3353 (201). — Herter 10384 (86), 68202 (82). — Heyde et Lux 321 (278), 3014 (2). 3118 (173), 3119 (442), 3120 (446). 3128 (? 41). 4047 (178), 4048 (189), 4050 (225), 4051 (187), 4052 (267), 4053 (442), 4055 (305), 4056 (225), 4381 (173),

4394 (278), 4395 (? 41), 4397 (392), 4398 (442), 4399 (2), 4400 (189), 4401 (131), 4564 (225). — Heyde 321 (278), 356 (187), 602 (189). — Hieronymus 85 (13), 508 (13), 560 (12), 622 (12), 837 (12). — Hieronymus et Niederlein 88 (12), 539 (12), 747 (12). — Hieronymus et Lorentz 218 (253), 720 (12), 769 (12), 789 (253), 984 (253), 985 (135), 1034 (253). — Hinton 133 (189), 134 (41), 267 (366), 269 (174), 299 (437), 330 (450), 334 (380), 563 (363), 585 (28), 795 (294), 912 (363), 914 (362), 952 (32), 963 (71), 984 (254), 985 (135), 999 (32), 1096 (69), 1117 (32), 1309 (261), 1346 (224), 1438 (245), 1570 (27), 1589 (381), 1788 (381), 2073 (381), 2096 (38), 2123 (178), 2204 (442), 2274 (301), 2373 (437), 2470 (? 41), 2605 (279), 2640 (131), 2654 (179), 2675 (178), 2700 (46), 2713 (437), 2761 (450), 2772 (41), 2816 (437), 2823 (189), 2840 (218), 2860 (442), 2884 (450), 2906 (218), 3024 (334), 3051 (442), 3064 (46), 3066 (189), 3510 (28), 3542 (294), 3552 (28), 3557 (131), 4278 (50), 4376 (119a), 4377 (119a), 4440 (45), 4886 (448), 4892 (131), 5223 (448), 5235 (131), 5237 (363), 5304 (179), 5332 (31), 5374 (245), 5406 (46), 5472 (4), 6234 (119a), 7473 (366), 8084 (45), 8684 (294), 8805 (366), 8828 (33), 8852 (28), 8909 (174), 8938 (284), 8959 (189), 9081 (50), 9294 (362), 9482 (335), 9696 (301), 9702 (381), 9761 (86b), 9762 (281a), 9867 (173), 9873 (380), 9878 (41), 9884 (86a), 9927 (437), 9946 (280a), 10150 (86b), 10310 (278), 10350 (314a), 10351 (314a), 10450 (362), 11686 (5a). — Hitchcock 20324 (305), 20694 (405), 20725 (134), 20826 (435a), 20893 (113), 21347 (108), 21499 (140), 21587 (140), 21606 (57), 21708 (18), 22400 (141), 22421 (99). — Hoehne 344 (403), 477 (467), 1319 (461), 1322 (403), 2483 (232), 2688 (236), 2864 (370), 6146 (449), 6266 (236), 18470 (468), 19350 (402), 19583 (370), 23049 (463), 23051 (85), 23094 (232), 23261 (232), 23490 (85), 24125 (463), 24260 (167), 24323 (167), 24616 (167), 25173 (232), 25312 (463). — Holmgren 186 (113), 253 (435), 638 (103), 927 (112). — Holton, J. F. 476 (138), 477 (113, 114), 478 (298), 479 (330), 480 (421), 481 (113), 482 (172), 483 (421). — Holway 19 (173, 391), 41 (391), 78 (173), 88 (390), 99 (173), 107 (391), 156 (392), 186 (442), 258 (177), 290 (132), 314 (17), 329 (154), 358 (177), 386 (250), 504 (381), 507 (69), 546 (173), 547 (225), 579 (391), 675 (307), 700 (307), 724 (442), 741 (391), 768 (173), 825 (168), 833 (390), 835 (405), 838 (319), 839 (405), 842 (147), 865 (112), 889 (435A), 930 (435), 966 (57), 992 (144), 1039 (464), 1802 (322), 1802a (323), 1806 (376), 1993 (369), 3493 (218), 3579 (363), 5256 (33). — Jahn, A. 620 (138), 670 (98), 1142 (326), 1145 (109). — Jameson 31 (18), 52 (18), 70 (144), 71 (144), 105 (144), 113 (18), 131 (57), 132 (144), 133 (56), 134 (140), 136 (18), 194 (57), 227 (435), 272 (144), 292 (112), 341 (18), 421 (144), 464 (18), 606

(131), 685 (435), 711 (144), 797 (103), 886 (134). — Jelski 115 (143), 119 (150). — Johnson, H. 16 (178), 18 (225), 21 (442), 47 (391), 156B (391). — Johnston, I. M. 2631 (127), 2635 (127), 3573 (99), 3574 (141), 3624 (100), 3810 (238), 3920 (238), 5085 (12), 5261 (141), 5336 (141), 5337 (12), 5450 (12), 5482 (12), 5610 (12). — Jones, M. E. 377 (381), 380 (43), 549 (127), 635 (206), 4114 (127), 6085 (127), 17301 (280), 22528 (29), 22529 (4), 22594 (4), 23158 (51), 23164 (180), 23165 (179), 23166 (4), 23208 (3), 23214 (51), 23215 (51), 23216 (76), 23218 (221), 23220 (221), 23254 (3), 23527 (179), 23532 (51), 23536 (51), 24131 (240), 24132 (240), 24443 (4), 24444 (5), 24986 (127), 26200 (10), 26203 (242), 27289 (278), 27296 (218), 27297 (280), 27298 (423), 28538 (242), 28605 (363B), 28606 (363B). — Jönssen 171a (82), 994a (463), 1095a (463), 1310a (232). — Jörgensen 1167 (255), 1168 (12), 2235 (227), 2237 (227), 3913 (227), 3937 (232), 4361 (166), 4581 (234). — Jurgensen, C. 184 (331), 271 (270), 340 (173), 676 (260), 910 (390). — Juzepczuk 1413 (267), 4932 (114), 5727 (444, 445). — Kalbreyer 872 (136, 138), 996 (172), 1953 (109), 2013 (345), 2017 (300), 2032 (421). — Kalenborn 39 (143), 76 (110). — Kellerman 4361 (189), 4391 (442), 4761 (390), 4767 (173), 5229 (173), 5628 (268), 5806 (442), 5924 (173), 6608 (225), 6609 (453), 6749 (? 41), 7687 (173), 7688 (225), 7732 (4), 7778 (2), 7888 (4), 7959 (187), 7974 (187). — Kerber 1 (336), 89 (442), 138 (167), 157 (4), 161 (363), 223 (278), 299 (178). — Killip 125 (3), 7829 (436), 9779 (300), 11211 (113), 11935 (300). — Killip et Hazen 8844 (172), 9127 (421), 9130 (421), 9530 (102), 9553 (444), 11060 (4). — Killip et Smith 15604 (300), 16032 (299), 16092 (299), 16441 (330), 16619 (114), 16772 (419), 16874 (306), 16971 (321), 16973 (109), 17318 (137), 17319 (137), 17381 (298), 17695 (300), 17702 (345), 17898 (137), 18014 (114), 18144 (137), 18965 (299), 19389 (306), 19390 (172), 19416 (4), 19519 (139), 19683 (139), 19692 (114), 19735 (136), 19792 (306), 20540 (172), 20746 (139), 21646 (99), 21691 (99), 21760 (99), 21789 (143), 21804 (99), 21837 (143), 21838 (143), 21891 (143), 21928 (143), 21941 (143), 21982 (99), 22009 (110), 22105 (143), 22140 (99), 22245 (113), 23323 (111), 23350 (341), 23404 (2), 24387 (110), 24401 (106), 24711 (2), 24989 (2), 25311 (357), 25612 (358). — Lamb, F. H. 317 (3), 355 (318), 377 (3), 395 (318), 621 (179). — Langlassé 42 (436), 55 (51), 56 (41), 73 (108), 216 (314), 343 (276), 430 (331), 483 (180), 542 (276), 557 (442), 568 (131), 570 (398), 767 (439), 779 (53), 781 (185), 790 (189), 805 (185), 853 (184), 904 (353), 1044 (119), 1045 (68). — Lehmann 167 (435a), 187 (435), 220 (50), 338 (113), 448 (57), 455 (300), 826 (420), 916 (170), 1381 (442), 1400 (305), 1508 (73a), 1715 (118), 2258 (445), 3422 (167), 3508 (344), 3773

(57), 4047 (167), 4223 (170), 4557 (298, 300), 4704 (344). 4706 (57). 5154 (18), 5222 (444), 5503 (436), 5531 (305), 5799 (18), 5825 (444, 445?), 5826 (170), 5827 (435A), 5828 (172), 5831 (113). 6236 (435A), 6324 (112), 7281 (172), 7869 (56). — **Lemmon** 218 (387), 219 (363), 220 (38). 221 (278), 222 (363a), 226 (77), 2861 (23). — **Leon, Fr.** 2942 (94), 9548 (94), 10745 (158), 11010 (158). — **Leonard** 3045 (94), 3749 (87), 4990 (94), 5177 (94), 7195 (2). 8425 (292), 8432 (292), 11060 (89), 11732 (94), 11889 (89), 12637 (94), 13819 (89), 14680 (94). — **Liebmann** 5827 (435), 6236 (435), 15256 (3), 15277 (167), 15283 (167), 15289 (331), 15303 (278). 15308 (294), 15309 (68), 15310 (174), 15311 (174), 15312 (68). 15321 (38), 15323 (68), 15559 (363), 15560 (363), 15561 (363), 15562 (363), 15564 (305), 15569 (38), 15571 (38), 15573 (167), 15582 (38), 15585 (331), 15592 (331), 15595 (190), 15603 (442), 15607 (257), 15608 (294), 15613 (174), 15631 (198), 15632 (360), 15635 (190), 15636 (395), 15638 (452), 15639 (278), 15642 (190). 15644 (363). 15649 (4). 15650 (224). 15651 (396). 15652 (354). 15655 (295). 15659 (388), 15660 (367), 15661 (1), 15662 (117). 15671 (294). 15673 (442). 15674 (74), 15675 (295), 15676 (388). 15677 (368), 15678 (348), 15679 (74), 15683 (218), 15684 (276). 15685 (441), 15689 (117), 15690 (270), 15691 (367), 15693 (295). 15697 (223). 15701 (173), 15713 (294), 15714 (295), 15715 (452). 15721 (294), 15722 (294), 15730 (305), 15731 (2). — **Lindberg** 128 (370), 129 (236), 129a (385), 130 (232), 131 (402). — **Linden** 112 (114), 114 (167), 117 (336), 120 (295), 122 (174), 126 (331), 128 (390), 129 (305), 130 (190), 131 (173). 132 (115), 135 (41). 244 (420), 378 (138), 379 (298). 472 (298), 1098 (445), 1300 (345). — **Lindheimer** 114 (244), 145 (244), 498 (242), 564 (242), 672 (242). 1085 (244). 1086 (10). 1087 (10), 1090 (242), 1091 (242). — **Lloyd** 73 (10), 220 (25), 414 (91), 449 (174A), 451 (22), 452 (180). — **Lobb** 59 (82). 82 (54), 100 (112). 203 (56). 206 (167). 236 (55a). 237 (202). 293 (101), 296 (58), 297 (103). 368 (327). — **Löfgren** 1071 (402). 1556 (322), 15566 (323), 15567 (264), 15572 (322). — **Löfgren et Edwall** 2118 (232). — **Lorentz** 51 (82), 111 (254), 147 (13), 336 (255), 403 (255), 417 (255), 542 (12), 571 (255), 663 (255), 699 (13). 720 (254, 255), 746 (82), 984 (254), 1436 (241), 1439 (241), 1479 (241), 1563 (241), 1626 (241), 1739 (86), 1746 (82). — **Luederwaldt** 509 (324), 15573 (464), 15575 (372), 15576 (167). — **Lund** 893 (468), 895 (449). — **Lundell** 949 (206), 1010 (3), 1545 (3). 5040 (206), 5041 (195), 5042 (10), 5071 (195), 5204 (127), 5292 (195), 5304 (195), 5316 (206), 5338 (10), 5348 (73), 5360 (127). 5366 (68), 5470 (360). 5771 (206). 6165 (169), 6527 (169). — **Lyonnet** 15 (366). 190 (119). 461 (261). 463 (354), 464 (354a). 508 (38), 597 (71), 598 (69). 602 (363). 604 (224), 606 (437), 607

(45), 609 (129), 610 (331), 941 (33), 942 (36), 943 (278). 944 (174), 946 (69), 948 (33), 949 (65), 951 (278), 953 (174), 954 (366), 1012 (38). 1017 (295). — Macbride, J. F. 3091 (364), 3113 (55a). 3153 (400), 3412 (55). 3654 (113). 3661 (409), 3882 (308), 4063 (108), 4064 (108), 4309 (412). 4320 (409), 4478 (412), 4914 (409). 5609 (99), 5898 (100), 5905 (99). — Macbride et Featherstone 83 (200), 361 (99), 422 (99), 442 (99), 488 (167). 565 (110), 960 (143), 1062 (143), 1190 (365), 1212 (104), 1396 (55a), 1501 (110). 1599 (104), 1661 (55a). 1973 (143), 2056 (2), 2115 (55a), 2297 (11). 2381 (2), 2407 (364), 2410 (108), 2432 (55a). — Mackenzie 487 (244), 532 (244). — Malme 154 (86), 178 (228), 181 (385), 659 (234), 1190 (233). 1255 (401), 2175 (403). — Maltby 10 (3), 29 (3), 116 (317). — Mandon 115 (410), 195 (167), 510 (154), 511 (99. 307), 512 (410). — Martius 514 (329), 528 (464). — Mason, H. L. 1782 (317), 2027 (199). — Mathews 167 (143), 173 (447), 424 (2). 462 (200), 463 (11), 464 (200), 467 (141), 659 (110), 660 (104). 737 (100). 798 (55a). 799 (400), 800 (108), 801 (100), 802 (364), 1346 (57), 1347 (447), 1529 (59), 2131 (103), 2132 (59, 123), 3155 (142), 3156 (249). — Matuda 125 (41). 134 (297a), 138 (441A), 142 (336), 145 (390), 148 (442). 152 (178). 156 (442), 157 (178). 172 (129), 176 (442), 178 (331), 179 (126), 180 (2). 182 (189), 1895 (190), 1902 (390), 1903 (297a), 1949 (190), 1950 (41), 2009 (266a). — Maxon 3559 (442), 3686 (173), 4964 (338). — Maxon et Hay 3569 (351). — Mearns 88 (23), 874 (29), 1600 (363b), 1779 (62). 1860 (23), 1913 (23), 2174 (62). — Metcalfe 156 (127), 723 (9). 1209 (127), 1512 (29). — Mexia 111 (5), 161 (332), 211 (180). 244 (221). 429 (437), 438 (354), 448 (63), 471 (? 41), 801 (191). 872 (179), 1105 (3), 1327 (189), 1328 (354a), 1360 (437), 1376 (41), 1399 (179). 1401 (41). 1406 (75), 1407 (354a), 1429 (442), 1460A (51). 1506 (437), 1559 (313). 1582a (42), 1583 (49), 1588 (174), 1609 (366). 1683 (311), 1695 (51). 1801 (191), 2672 (224), 2679 (69). 2762 (119), 4017 (99), 4061 (108), 4124 (55). 4330 (374), 4389 (12). 5555 (467), 6986 (435), 7544 (112), 8727 (178), 8729 (334), 8789 (301), 8841 (279), 8944 (—), 8955 (381), 8973 (189), 8992 (442). 9056 (—), 9058 (185), 9071 (279), 9075 (279), 9097 (—). — Miers 402 (12), 3771 (167). — Mille 23 (112), 407 (112). — Miller et Griscom 18 (187), 87 (389). — Millspaugh 18 (94), 90 (4). 1295 (93), 1391 (93), 1469 (94), 1575 (94), 1634 (95). — Millspaugh et Millspaugh 9076 (91), 9358 (91). — Mohr 57 (336), 344 (331), 345 (175). — Montes et Salazar 12 (332), 88 (42), 90 (174A), 448 (220), 571 (5), 703 (180). — Moore et Steyermarck 3157 (62), 3157A (204), 3179 (379), 3222 (62), 3602 (242). — Morales 603 (189). 1143 (363), 1185 (225), 1238 (189), 1239 (225), 1363 (442). — Morong 65 (227), 415 (230), 965 (241), 1542 (241). —

Moritz 167 (271), 999 (326), 1001 (114), 1002 (138), 1004 (109). — Mosén 630 (236), 631 (385), 632 (370), 633 (402), 962 (232), 963 (402), 1524 (402), 1922 (370), 4315 (232), 4316 (385). — Moura 71 (377), 558 (468), 560 (468), 728 (371), 729 (322), 730 (322). 731 (322), 733 (322). — Müller, F. 98 (336), 143 (309), 304 (278). 446 (458), 447 (167), 761 (305), 770 (336), 850 (132), 870 (305). 935 (442), 1034 (450), 1069 (442), 1320 (117), 1542 (257), 1677 (257), 1713 (294), 2196 (63), 2208 (415), 2371 (127), 2374 (10). — Mueller, C. H. et M. T. 143 (309), 145 (207), 148 (363a), 313 (363 A), 475 (195), 516 (206), 637 (363 A), 653 (363 A), 759 (10). 857 (244), 895 (63), 1051 (195), 1133 (273), 1270 (379), 1335 (244). Mulford, A. Isabel 1067 (8), 1367 (127). — Nash et Taylor 1071 (91), 1700 (123), 3872 (91). — Nash, G. V. 1158 (167). — Neally 384 (242), 535 (245). — Nelson 132 (336), 177 (336). 189 (442), 235 (363), 306 (442), 396 (331), 419 (441), 611 (68). 742 (190), 744 (173), 958 (67), 1018 (68), 1050 (295), 1069 (174). 1090 (247), 1100 (295), 1169 (117), 1175 (278), 1183 (388), 1203 (224), 1235 (4), 1244 (132), 1289 (224), 1342 (441), 1345 (173). 1387 (39), 1448 (50), 1501 (442), 1511 (270), 1521 (380), 1522 (380). 1587 (395), 1595 (216), 1783 (50), 1794 (68), 1898 (218), 1915 (198). 1917 (379), 2005 (212), 2049 (132), 2064 (279), 2068 (354), 2085 (450), 2086 (183), 2087 (442), 2091 (380), 2093 (367), 2146 (279). 2186 (176), 2206 (189), 2220 (279), 2245 (174), 2300 (134), 2508 (390), 2668 (331), 2752 (127), 2792 (126), 2898 (267), 2922 (245). 2999 (245), 3062 (167), 3100 (245), 3138 (452), 3166 (368), 3171 (391), 3191 (247), 3201 (347a), 3230 (118), 3236 G (118), 3374 (343). 3401 (442), 3427 (391), 3429 (132), 3478 (442), 3484 (442), 3614 (279), 3625 (349), 3628 (293), 3635 (451), 3736 (168), 4057 (51). 4057 (51), 4072 (7), 4093 (366), 4102 (437), 4103 (189), 4104 (437). 4171 (186), 4247 (317), 4376 (167), 4557 (363B), 4566 (73), 4651 (63), 4663 (379), 4679 (218), 4755 (363b), 4807 (27), 4850 (40). 4969 (128), 5255 (29), 5591 (437), 6255 (128), 6315 (363b), 6567 (282), 6568 (437), 6575 (? 41), 6577 (437), 6584 (174), 6878 (354a). 6879 (28), 6880 (51), 6881 (437), 8301 (127), 32369 (118). — Nelson et Goldman 7432 (240). — Nicolas 141 (174), 372 (278), 604 (222), 1909 (278), 5405 (393), 5530 (393), 5535 (363). — Niederlein 83 (166), 115 (227), 187 (82), 512 (232), 513 (234), 1855 (85), 1859 (385), 1861 (232). — Oersted 7 (132), 12 (178), 13 (178), 17 (116). 18 (178), 21 (91), 26 (167), 27 (279), 28 (279), 31 (116), 33 (2), 34 (2), 35 (2), 36 (2), 38 (337), 51 (178), 15739 (178), 15741 (178). 15751 (338). — d'Orbigny 908 (403), 1228 (154), 1251 (177). 1281 (254). — Orcutt 710 (3), 1429 (2), 2619 (94), 2901 (3), 3136 (336), 3264 (131), 3266 (331), 3340 (87), 3479 (224), 3573 (129). 3718 (69), 3751 (38), 3832 (354a), 3873 (305), 3875 (305), 3868

(381), 3897 (127), 3926 (224), 3955 (174). 3966 (381), 4120 (305), 4152 (305), 4250 (305), 4254 (278), 4296 (354a), 4300 (278), 4321 (354a), 4517 (304), 5119 (3), 5276 (126), 5994 (10), 6006 (242). — Ortega, J. G. 88 (42), 562 (42), 563 (42), 703 (180), 4283 (47, 333). 4364 (5), 4713 (42), 5076 (226), 5095 (313), 5343 (450), 5354 (42), 5375 (180). 5914 (333), 5974 (332), 6006 (437), 6039 (354), 6498 (332), 6592 (180). 6726 (332), 6900 (179). — Osten 3322 (86), 3340 (385), 5331 (86). 5393 (385), 5394 (82), 5398 (241). — Otto 480 (329), 682 (305). — Pachaño 20 (18), 62 (305), 69 (113), 70 (112), 99 (134), 192 (57), 202 (146), 207 (113). 224 (435a). — Palmer et Riley 170 (3). — Palmer 7 (3, 238), 8 (10), 10 (3). 21 (10), 28 (77), 39 (206), 53 (246), 57 (450), 61 (76), 64 (5), 77 (167), 96 (333), 106 (167, 450), 107 (10), 111 (354a), 113 (167). 115 (?41), 118 (244), 141 (442), 153 (206), 154 (333), 157 (333), 161, 206, 363 (363a), 162 (354a), 166 (394), 171 (305), 183 (43), 184 (416), 187 (315), 188 (305), 189 (119), 194 (196), 196 (305), 197 (33). 205 (131, 180), 226 (245), 244 (3), 259 (418), 270 (174a), 292 (174a, 379), 305 (29), 315 (167), 320 (4), 327 (127, 131), 334 (130), 335 (305), 336 (127), 345 (47), 368 (194), 379 (363b), 386 (94), 404 (379), 415 (63), 417 (206), 422 (130), 446 (127), 449 (73), 451 (129), 477 (379), 479 (4), 482 (363), 488 (334), 493 (129), 498 (4), 545 (63), 556 (34), 572 (305). 598 (280). 635 (379), 640 (363a), 662 (442), 680 (5), 681 (180), 682 (180), 684 (199). 717 (10), 726 (379), 751 (197), 757 (131), 760 (72), 844 (363b), 878 (238). 914 (3), 967 (131), 1061 (244), 1062 (305), 1064 (196), 1065 (242). 1066 (242), 1067 (10), 1068 (10), 1069 (10), 1070 (10), 1071 (206), 1072 (196), 1074 (167), 1075 (167), 1076 (167), 1078 (363a), 1079 (379). 1091 (244), 1096 (263), 1097 (63), 1098 (63), 1441a (354a), 1675 (333), 1749 (5), 1869 (233), 1897 (179), 1911 (?41), 1964 (311), 1967 (51), 1984 (221), 2009 (76), 2012 (186), 2065 (76), 6568 (244). 6815 (244). 8879 (244), 8966 (244), 9261 (242), 10130 (10), 10815 (242). 11092 (10), 11103 (244), 11337 (10), 11814 (242), 12131 (10). 12983 (10). 17757 (61), 28957 (244), 32006 (62), 32146 (245), 32843 (244), 35465 (61), 38355 (4). — Parry et Palmer 26 (206). 29 (196), 698 (1), 729 (33), 730 (214), 731 (214). 736 (129), 739 (363a), 740 (415), 741 (379), 743 (305). 744 (127). 745 (73), 746 (73), 746½ (305), 747 (363), 748 (363b). 750 (195A). 751 (197), 752 (224), 753 (195), 754 (363a), 755 (394), 756 (68), 757 (354A). 758 (354A), 759 (119), 760 (72), 761 (71). — Pearce 261 (408), 565 (152), 629 (254). 631 (?13), 639 (149), 851 (410). — Peebles, Harrison et Kearney 3329 (29), 4494 (62), 4750 (29), 7050 (23), 12461 (127). — Pennell 2301 (138), 2360 (298), 2427 (345), 2563 (298), 3186 (298), 3308 (113), 4031 (2), 4758 (2), 5667 (113), 7158 (420), 7159 (344), 7663 (113), 8901 (172), 8910 (172), 9206 (421).

9212 (114), 9234 (298), 9343 (298). 9345 (298), 10220 (178), 10241 (172), 10280 (305), 10282 (113), 10295 (172), 10604 (305), 10616 (433), 10766 (113), 10792 (305), 10976 (4), 13531 (99), 13543 (143), 13604 (143), 13608 (143). 13650 (201), 13671 (113), 14331 (143). 14332 (200), 14419 (110), 14439 (143), 14488 (2), 14494 (104). 14506 (200). 14510 (200). 14773 (141), 14788 (99), 16877 (167), 17321 (206). 17339 (206), 17342 (63), 17379 (379), 17400 (206), 17475 (63), 17484 (10). 17489 (379), 17514 (214), 17515 (195), 17538 (269), 17549 (206). 17551 (68). 17578 (127). 17592 (214), 17628 (1), 17646 (205), 17664 (205), 17681 (379), 17697 (72). 17701 (415), 17702 (195A), 17785 (363a), 17803 (119), 17815 (394), 17818 (33), 17923 (167), 17934 (214), 18032 (10), 18203 (129). 18222 (127), 18231 (73), 18244 (63), 18260 (44), 18359 (80), 18397 (63), 18417 (27), 18420 (42), 18450 (173), 18494 (42), 18706 (9). 18708 (9), 18982 (128), 19022 (305), 19806 (221), 19930 (245), 20084 (44), 20106 (41). — **Pennell et Killip** 6395 (138), 6433 (114), 6459 (172), 8096 (172, 436). — **Pere Duss** 2160 (94). — **Picarda** 626 (122), 937 (122), 1172 (122). — **Pilger** 745 (461). — **Pittier** 17 (173). 18 (167). 19 (390), 82 (279), 105 (279), 338 (352), 342 (305), 415 (363), 429 (70). 456 (203). 697 (113). 746 (132). 856 (4), 1052 (436), 1244 (172), 1262 (113), 1269 (114). 1421 (170). 1426 (344), 1433 (57), 1448 (436). 1781 (279). 1811 (225). 1882 (187), 1887 (442), 2431 (338), 2449 (94), 2910 (278). 3105 (295). 3134 (338), 3255 (279), 3261 (178), 3451 (296), 3894 (2), 4233 (338), 4504 (2), 4510 (178), 5312 (350), 6161 (167), 6635 (2), 7112 (279), 7158 (116), 7210 (167), 7277 (178), 7309 (329), 9176 (271), 9547 (167), 9926 (4), 10248 (2), 10372 (167), 10388 (329), 10462 (305). 10618 (296), 10636 (169), 10637 (350), 11169 (338), 11423 (2). 11555 (167), 12149 (169), 12642 (328). 12688 (114), 12899, (138), 13034 (116). 13080 (329), 13164 (114), 14115 (338). — **Pittier et Durant** 1476 (392), 10636 (169). — **Pohl** 59 (466), 210 (402), 491 (236), 960 (402). 1718 (404), 2425 (402). 3707 (375). 4719 (456), 4720 (167), 5015 (369), 6025 (449). — **Polakowsky** 161 (116). 376 (116), 387 (392). — **Popenoe** 928 (391). 947 (390). 951 (225). — **Preuss** 1466 (167), 1585 (329). 1673 (4). — **Pring** 81 (114), 108 (345), 184 (345). — **Pringle** 52 (204). 77 (2). 239 (363), 637 (363b), 654 (127), 659 (9), 790 (204), 791 (29), 911 (127). 1028 (363b). 1119 (437), 1727 (4), 1764 (363b), 1798 (334), 2297 (178), 2384 (379), 2421 (450), 2458 (442), 2463 (280, 331), 2463 (334), 2555 (77), 2560 (43), 2818 (278), 3037 (363b), 3058 (416). 3157 (354), 3170 (195), 3206 (214), 3224 (274), 3273 (214), 3593 (51), 3946 (437), 3954 (41), 3981 (174), 4097 (51), 4150 (79), 4155 (71). 4163 (245). 4200 (69), 4227 (387), 4258 (27), 4278 (38), 4298 (363), 4351 (48), 4564 (426), 4624 (34), 4659 (117), 4705 (388), 4763 (270).

4772 (295), 4845 (74), 4862 (132), 4947 (173), 4953 (278), 4960 (380), 4991 (441), 5176 (304), 5374 (416), 5643 (295), 5654 (396), 6013 (50), 6240 (395), 6245 (24), 6251 (198), 6538 (214), 6850 (335), 6862 (366), 6905 (1), 6907 (195), 6914 (224), 7078 (302), 7449 (360), 7457 (50), 7521 (174), 7548 (363), 7612 (45), 7615 (28), 7643 (65), 7711 (174), 7991 (129), 8020 (28), 8035 (189), 8039 (437), 8222 (33), 8360 (278), 8366 (4), 8378 (381), 8379 (302), 8380 (442), 8381 (301), 8402 (448), 8403 (64), 8418 (277), 8426 (278), 8430 (212), 8434 (278), 8450 (65), 8455 (354 A), 8456 (129), 8457 (45), 8478 (336), 8504 (334), 8567 (198), 8586 (92), 8587 (30), 8590 (24), 8593 (215), 8608 (261), 8614 (33), 8615 (278). 8638 (246), 8639 (416), 8674 (359), 8675 (119), 8698 (448), 8744 (218), 8757 (76), 8776 (36), 8856 (52), 8887 (259), 8927 (297), 8928 (78), 8940 (312), 9074 (366), 9079 (305), 9081 (38), 9087 (71), 9088 (245), 9127 (189), 9128 (437), 9159 (69), 9160 (335), 9161 (335), 9204 (64), 9215 (131), 9350 (246), 9376 (334), 9497 (335), 9523 (127), 9658 (76), 10072 (380), 10104 (63, 214), 10115 (131), 10298 (258), 10312 (63, 214), 10313 (214), 10328 (380), 10346 (51), 11106 (212), 11107 (212), 11108 (224), 11109 (245), 11110 (10), 11111 (195), 11112 (195), 11113 (71), 11114 (1), 11115 (174), 11116 (335), 11117 (366), 11118 (33), 11119 (437), 11120 (334), 11121 (41), 11122 (448), 11123 (354 A), 11124 (334), 11125 (45), 11126 (43), 11127 (278), 11128 (278), 11129 (278), 11130 (442), 11131 (379), 11132 (189), 11133 (381), 11134 (64), 11135 (305), 11136 (302), 11137 (77), 11138 (77), 11331 (218), 11681 (10), 11682 (280), 11683 (167), 11684 (71), 11685 (174), 11686 (38), 11686 $^1/_2$ (335), 11687 (366), 11688 (363), 11689 (34), 11690 (334), 11691 (450), 11692 (354 A), 11693 (278), 11694 (442), 11696 (305), 11697 (442), 11906 (303), 13161 (27), 13162 (167), 13163 (387), 13164 (129), 13165 (214), 13166 (45), 13167 (278), 13168 (278), 13169 (379), 13170 (218), 13171 (64), 13279 (278), 13280 (304), 13281 (303), 13683 (363 b), 13811 (261), 13978 (303), 13993 (36), 15038 (366). — Purpus 23 (35), 39 (366), 67 (174), 83 (354 A), 84 (69), 90 (266), 151 (174), 155 (35), 157 (174), 164 (190), 178 (354 A), 183 (387), 191 (189), 192 (240), 209 (294), 217 (387), 245 (240), 289 (363), 402 (92), 409 (363), 431 (219), 437 (190), 444 (129), 485 (395), 1083 (196), 1084 (206), 1296 (198), 1297 (395), 1416 (195), 1417 (10), 1457 (25), 1717 (33), 1718 (189), 1719 (294), 1720 (35, 41), 1721 (366, 387), 1722 (174), 1723 (354 A), 1724 (224), 1725 (214), 1726 (278), 1932 (188), 2248 (178), 2249 (442), 2250 (442), 2493 (1), 2506 (70), 2555 (396), 2556 (132), 2557 (24), 2558 (1), 2577 (215), 2577 A (215), 2578 (216), 2579 A (361), 3080 (278, 348), 3282 (132), 3283 (395), 3284 (127), 3285 (224), 3286 (92), 3287 (92), 3288 (217), 3289 (360), 3290 (117), 3291 (379), 3292 (361), 3953 (117), 3954 (216), 3955

(132), 3957 (217), 3958 (68), 3959 (215), 3962 (360), 4165 (216), 4166 (215), 4167 (68), 4168 (278), 4169 (440), 4232 (41), 4592 (379), 4593 (206), 4636 (26), 4637 (63), 4674 (379), 4675 (127), 4676 (10), 4754 (243), 4755 (305), 4756 (196), 4869 (214), 4870 (214), 4871 (66), 4950 (414), 5301 (127), 5302 (414), 5303 (10), 5304 (66), 5449 (68), 5500 (274), 5678 (203), 5679 (70), 5754 (442), 6874 (442), 6887 (41), 6892 (390), 7004 (267), 7006 (272), 7387 (188), 8773 (393), 8954 (393), 9208 (272), 9209 (126), 9264 (190), 9277 (267), 9312 (190), 9313 (190), 10037 (190), 10164 (190), 10253 (267), 10429 (126), 10454 (190), 10457 (190), 10533 (266), 11075 (3), 11159 (2), 12010 (178), 12085 (190), 14017 (336). — Regnell 208 (377), 312 (370), 313 (402), 314 (232), 314½ (236), 315 (385), 316½ (236), 932 (468), 933 (256), 934 (82), 935 (449), 939 (82). — Reko 3506 (267), 3717 (390), 4232 (395), 4874 (442), 4886 (43), 5004 (381), 5202 (218), 5269 (63), 5270 (206), 5289 (127). — Reverchon 762 (10), 2030A (244), 2030B (242). — Ricksecker 79 (2), 173 (91, 94), 229 (91). — Riedel 7 (375), 9 (369), 35 (402), 37 (236), 809 (464), 1246 (157). — Rimbach 81 (105), 94 (109), 140 (209), 141 (112), 142 (134), 205 (147), 392 (435), 479 (209), 704 (435). — Rodriguez 32 (234), 66 (86), 123 (206), 156 (253), 238 (230), 386 (307), 399 (254), 1343 (254), 1419 (12), 1463 (135). — Rojas 2566 (227), 9823 (232), 10005 (385), 10183 (233). — Rose, J. N. 1609 (220), 1727 (81), 1934 (246), 2233 (32), 2338 (37), 2402 (363), 2601 (19), 2635 (354), 2682 (302), 2743 (366), 2745 (245), 2804 (363), 2844 (417), 2862 (132), 3407 (80), 3627 (448), 3638 (354), 4694 (71), 4729 (1), 5312 (354A), 5398 (174), 5613 (174), 5632 (1), 5691 (71), 5965 (71), 6046 (387), 6311 (174), 6494 (71), 6606 (245), 6628 (354), 6629 (129), 6711 (195), 6783 (71), 6833 (218), 6893 (381), 6933 (442), 6969 (302), 6970 (305), 8468 (71), 8469 (245), 8626 (71), 8745 (1), 8756 (195), 8757 (363), 8758 (214), 8791 (224), 8930 (219), 9023 (25), 9081 (224), 9103 (379), 9175 (363), 9233 (71), 9459 (354a), 9508 (218), 9598 (129), 9745 (278), 11141 (218), 11415 (198), 11419 (23), 11437 (24), 12724 (5), 12799 (180), 13092 (47), 13139 (4), 13862 (318), 13876 (318), 14066 (318), 14722 (318), 16136 (199), 17133 (127), 17522 (127), 17981 (10), 18611 (100), 18709 (143), 18984 (141), 19044 (143), 22278 (405), 22289 (113), 22531 (2), 22706 (57), 22710 (147), 22768 (144), 22936 (57), 22953 (134), 23049 (140), 23134 (56), 23328 (113), 23260 (143), 23261 (305), 23291 (113), 23292 (145), 23304 (140), 23305 (108), 23351 (108), 24125 (242), 24172 (167). — Rose et Hay 5412 (363), 5419 (245), 5503 (363), 5623 (214), 5632 (1), 5826 (395), 5922 (92), 6046 (387), 6050 (69), 6099 (442), 6109 (336), 6222 (29), 6267 (280), 6371 (280). — Rothrock 407 (62), 550 (91). — Rovirosa 82 (331), 930 (383). — Rozynski

168 (305), 217 (3), 530 (244). — Ruano 1114 (278), 1187 (278), 1266 (279), 1267 (173), 1355 (391). — Rügel 119 (94), 120 (4). — Runyon 297 (10), 323 (10), 804 (4), 932 (3). — Rusby 93 (154), 122 (69), 172 (261), 314 (174), 323 (69), 342 (9), 345 (29), 1414 A (2), 1496 (154), 2414 (155), 2439 (154). — Rusby et Pennell 519 (434), 546 (172), 570 (434), 574 (434), 638 (114), 886 (421), 1090 (4). — Russell et Souviron 79 (387), 105 (363), 145 (69), 212 (69). — Ruth 112 (244), 538 (61), 719 (242), 990 (242), 1339 (242), 3326 (61). — St. Hilaire 5 (232, 465), 34 (237), 56 (375), 62 (322), 81 (237), 94 (370), 119 (402), 158 (322), 179 (402), 234 (236), 319 (232), 371 (377), 451 (449), 701 (375), 706 (232), 886 (402), 909 (232), 1024 (166), 1080 (374), 1141 (372), 1255 (449), 1469 (85), 1599 (85), 1891 (86), 2050 (237), 2080 (86), 2149 (402), 2346 (82 a), 2372 (375), 2398 (241), 2433 (375), 2484 (82), 2491 (241), 2501 (241), 2545 (232), 2606 (234), 2638 (82), 2640 (232), 2658 (232), 2756 (385), 2791 (232). — Salvin et Godman 58 (173), 76 (? 41), 120 (392), 161 (442). — Santander 2214 (167). — Savatier 378 (200), 379 (200), 423 (143). — Scala 100 (86), 201 (86), 202 (241). — Schaffner 187 (363), 234 B (448), 325 (119), 326 (66), 329 (363 a), 330 (205, 363), 332 (379), 333 (415), 334 (360), 335 (10), 336 (214), 337 (72), 394 (363), 395 (174), 396 (366), 397 (129), 398 (195), 399 (218), 410 (41), 412 (278), 415 (305), 417 (245), 422 (354), 486 (305), 572 (41), 573 (245), 575 (69), 576 (71), 577 (363), 580 (366), 648 (1), 660 (363 a), 661 (363), 662 (205), 663 (195 a), 664 (195), 665 (379), 666 (415), 667 (360, 366), 668 (393), 669 (448), 670 (10), 671 (214), 672 (72, 245), 673 (127), 674 (305), 675 (131), 676 (119), 677 (354 a), 678 (66), 680 (73), 1053 (131). — Schenck 2799 (371). — Schickendantz 32 (12), 45 (12), 53 (12), 100 (255), 155 (255), 204 (255), 247 (12), 249 (255), 256 (255), 281 (12). — Schimpff 443 (2), 747 a (110). — Schipp, W. A. 632 (383). — Schlim 154 (4), 187 (432), 294 (208), 451 (172), 550 (443), 792 (422), 822 (327), 953 (208), 1107 (443), 1108 (432). — Schmitz 226 (425), 258 (448), 259 (195). — Schreiter 46 (253), 47 (254), 48 (254), 163 (253), 360 (307), 444 (254), 445 (253), 448 (12). — Schulz 5 (227), 6 (241), 795 (127). — Schumann, W. 217 (275), 227 (379). — Schwacke 6745 (322), 8069 (468), 9101 (375). — Seaton 259 (71), 260 (363), 304 (305), 323 (70), 376 (117), 431 (336), 500 (132). — Seeman 260 (2), 714 (113), 715 (145), 721 (57), 1100 (178), 1176 (442), 1496 (179), 2071 (186), 2072 (174), 2075 (333), 2076 (218), 2077 (174), 2079 (262), 2080 (442), 2081 (41). — Seler, Ed. 1089 (10), 1149 (334), 1193 (354 a), 1198 (437), 1203 (437), 1229 (127), 1230 (245), 1237 (334, 335), 1238 (4), 1255 (41), 1276 (278), 1280 (442), 1520 (270), 1930 (245), 2085 (? 41), 2107 (390), 2147 (? 41), 2157 (? 41), 2248 (390), 2261

(442), 2338 (442), 2433 (115), 2771 (305), 2991 (245), 3297 (391), 3594 (442). — Sellow (Sello) 75 (456), 76 (372), 141 (464), 153 (85), 248 (232), 263 (86), 306 (456), 307 (464), 308 (465), 322 (82), 392 (82), 466 (82), 522 (370), 526 (449), 576 (82), 604 (464), 816 (323), 831 (86), 861 (376), 877 (323), 946 (241), 966 (236), 977 (82), 1010 (402), 1049 (241), 1083 (385), 1308 (86), 1358 (228), 1411 (234), 1459 (232), 1460 (232), 1462 (467), 1463 (375), 1464 (229), 1465 (449), 1988 (86), 2048 (86), 2233 (465), 2255 (86), 2539 (85), 2726 (232), 2903 (86), 3060 (228), 3087 (86), 3388 (236), 3430 (82), 3446 (236), 3530 (232), 3616 (236), 3810 (232), 3931 (234), 4185 (462), 4260 (84), 4332 (462), 4461 (82a), 4518 (325), 4539 (85), 4552 (462), 4726 (232, 233), 4741 (85), 4912 (85), 5375 (462). — Shafer 1173 (91), 2373 (2), 3233 (157), 3719 (157), 3766 (157), 3825 (157), 4075 (378), 8088 (378), 8244 (157). — Shannon 260 (213), 261 (173), 3612 (267). — Shreve 5080 (363b), 5953 (23), 6634 (333), 6653 (23), 7278 (4), 7820 (240). — Sieber 124 (91), 151 (2), 189 (355), 379 (91), 403 (2). — Sintenis 50 (94), 207 (2), 271 (167), 5636 (2). — Skutch, A. 6 (173), 66 (278), 99 (451), 100 (294), 106 (391), 223 (391), 273 (451), 641 (118), 672 (391), 715 (391), 775 (391), 776 (294), 827 (225), 829 (225), 1087 (391), 1089 (260), 1090 (294), 1156 (319), 1175 (279), 1192 (132), 1266 (73A), 1272 (451), 1274 (368), 1275 (347), 1277 (391), 1600 (391), 1618 (173), 1688 (442), 1726 (442), 1728 (189), 1840 (189), 1870 (442), 1873 (178), 1879 (391), 1927 (391), 1931 (132), 1971 (319), 1972 (453), 2898 (119), 2939 (2). — Small et Carter 553 (94), 2683 (94), 2686 (94), 8443 (94), 8710 (2), 8821 (91), 8845 (2), 8927 (91). — Small et Mosier 5745 (94), 5982 (94), 6030 (94). — Small, Mosier et Small 5682 (94). — Small et Small 4672 (94), 4843 (94). — Smith, C. L. 418 (174), 420 (173), 421 (117), 424 (388), 427 (50), 529 (295), 531 (270), 533 (442), 534 (132). — Smith, L. C. 167 (354), 168 (367), 306 (450), 414 (73), 477 (388), 601 (41), 875 (367), 930 (218). — Smith, H. M. 65 (86). — Smith, H. H. 279 (431), 379 (431), 562 (178), 567 (431), 807 (355), 1363 (2), 1370 (329), 1370A (329), 1371 (178), 1380 (382), 1381 (327). — Smith, H. H. et G. W. 807 (355). — Smith, J. D. 1666 (442), 1679 (225), 1903 (442), 1911 (187), 2050 (187), 2157 (173), 2169 (390), 2187 (225), 2597 (189), 4056 (225), 4397 (392), 4919 (279), 4920 (295). — Smith, J. G. 283 (4), 470 (363). — Snodgrass et Heller 61 (2), 96 (2), 217 (2), 362 (2), 407 (2). — Spegazzini 1636 (253), 1667 (253), 1669 (241), 1670 (12), 1671 (12), 1677 (234), 1678 (241), 1679 (253), 1680 (254), 1681 (254). — Spruce 4330 (357), 4932 (2), 5308 (57), 5434 (435a, 449a), 5543 (356), 5581 (112), 5772 (134), 5822 (209), 5947 (18), 5987 (2), 5988 (4), 5990 (147), 6054 (405), 6087 (103). — Standley 288 (244), 420 (244).

5165 (29), 19587 (189), 19962 (189), 20189 (350), 21491 (392), 21513 (189), 21521 (442), 21522 (350), 21788 (178), 22989 (442), 23792 (331). 24135 (331), 27072 (2), 29509 (178), 32190 (279), 32213 (279), 32264 (116), 32561 (279), 32660 (279), 32821 (279), 32875 (116), 33173 (338), 33321 (392), 33428 (338), 34037 (279), 34222 (338), 34504 (279), 34537 (279), 34675 (338), 34789 (279), 35358 (295), 35420 (338), 35435 (295), 35538 (295), 35766 (338), 40465 (242), 40597 (204), 40763 (204), 41202 (116), 41206 (279), 41252 (116), 41484 (116), 41588 (178), 41856 (279), 41891 (279). 42368 (305), 42505 (392), 42767 (295), 42910 (337), 42964 (337), 43339 (305), 49545 (116), 51106 (338), 53400 (2), 53605 (331), 53919 (331), 55074 (331), 55842 (347), 55843 (? 41), 55899 (389), 55912 (4), 55914 (187), 55917 (389), 55949 (173), 55973 (442), 55976 (442), 56003 (? 41), 56110 (173), 56141 (305), 56283 (305), 56324 (187), 56346 (389), 56444 (178). — Standley et Torres 47722 (279), 49949 (338). — Standley et Valerio 43221 (279), 43535 (296), 43594 (295), 43817 (296), 48149 (279), 49240 (338), 49426 (279), 49438 (392), 49545 (116), 49663 (338), 49743 (338). — Steinbach 7504 (406), 8200 (252), 8231 (339), 8303 (14), 8779 (154), 8875 (406), 9846 (154). — Stevens 1793 (244), 2878 (244), 3405 (244), 6366 (94). — Stewart 3328 (2), 3330 (2), 3331 (2), 3332 (2), 3334 (2), 3335 (2), 3336 (2), 3337 (2), 3338 (2), 3339 (97), 3340 (97). — Stone 17 (442), 26 (336), 234 (29), 400 (363b), 725 (363b). — Stückert 6755 (135), 6979 (135). — Tate 54H (393), 57H (381), 59H (355), 60H (448), 61H (38), 62H (245), 288 (178), 289 (2), 532 (134), 540 (112), 560 (113), 637 (113). — Tharp 531 (244), 658 (10), 2780 (244), 3704 (245), 3705 (206), 3708 (206), 3710 (10), 8151 (62). — Thieme 5420 (331), 5422 (2). — Thompson 69 (127), 230 (94), 1118 (2). — Tonduz 470 (392), 701 (305), 728 (225), 835 (4), 1398 (2), 1400 (279), 1476 (392), 1579 (178), 1898 (338), 2529 (392), 3144 (278), 3895 (2), 4030 (169), 4233 (338), 4686 (178), 7158 (116), 7176 (279), 7228 (178), 7277 (178), 7280 (2), 7768 (2), 8456 (305), 8457 (2), 8495 (178), 8538 (2), 9785 (116), 10433 (392), 11640 (279), 12829 (116), 13652 (4), 13653 (2). — Townsend et Barber 314 (29), 426 (438), 7290 (438). — Tracy 3948 (244), 6901 (5), 7993 (127), 8339 (244), 8340 (127). — Tracy et Earle 138 (242). — Tracey, Mrs. J. A. 53 (171), 78 (345), 79 (138), 129 (421), 351 (421). — Trelease 726 (244), 727 (244). — Triana 2004 (445), 2006 (345), 2007 (102), 2010 (420), 3597 (113). — Türckheim 110 (225), 299 (178), 345 (392), 493 (41), 500 (442), 637 (225), 638 (305), 780 (343), 933 (352), 1090 (2), 1192 (225), 1193 (? 41), 1194 (391), 1380 (442), 1532 (278), 1548 (115), 1565 (391), 1594 (178), 1932 (2), 2301 (225), 2345 (343), 2534 (94), 2631 (2), 2896 (159), 2929 (122), 2973 (87).

3000 (124), 3435 (160), 3601 (94). 3611 (164), 8266 (131), 8271 (225), 29736 (94). — Ule 79 (449). 1206 (84). 1534 (86), 1859 (463), 4345 (466), 4346 (371), 4347 (369). 4348 (369). — Valeur 519 (167), 617 (167), 644 (2). — Van de Venne 350 (166). — Van Hermann 241 (131), 285 (4), 446 (4). 448 (94). 449 (94), 512 (131), 519 (2), 519 (3), 605 (2, 3), 759 (464). — Vauthier 408 (468). — Vasey 327 (204). — Venturi 9 (82), 86 (253). 109 (385), 130 (241). 190 (82), 260 (167). 273 (241), 982 (254). 1522 (254). 1522 (254). 1663 (253), 2261 (385), 2423 (253), 2659 (254, 307). 3045 (254), 3674 (12), 3764 (12), 3836 (135), 4287 (12). 4340 (12). 4374 (12), 4377 (307). 4380 (253), 4774 (254), 4880 (12), 4956 (254). 5152 (253), 7674 (253), 7836 (12), 8069 (16), 8119 (253), 8208 (307). 8607 (12), 8708 (307), 9128 (232), 9349 (307), 9767 (227). — Warming 46 (468). 895 (449), 902 (464). — Warcsewiz 11 (144), 12 (134). — Wawra 69 (466), 2659 (108). — Weberbauer 134 (143), 183 (110), 1457 (141). 1472 (99), 5702 (141), 6043 (57), 6069 (60), 6399 (148), 6590 (151). 6638 (413), 6699 (409), 7141 (107), 7256 (154), 7270 (154), 7796 (411), 7858 (153), 7910 (308). — Weddell 562 (464), 946 (402), 1786 (468). 1790 (449), 1796 (402), 3612 (253), 3690 (339), 3862 (254). 4105 (14). 4471 (154), 4708 (339). — Weir 172 (468), 188 (114), 301 (232). — Werdermann 2711 (307). — West, J. 3620 (141), 3655 (111). 3756 (108), 6175 (12). 6188 (12). — Wiggins 6208 (333), 6211 (305). 6388a (4). 7131 (333). 7152 (23), 7382 (483), 7882 (240), 7892 (240). — Williams 104 (10), 705 (331), 877 (154), 2399 (154), 6236 (172). 7450 (172), 7656 (172). — Wilson 275 (331), 7872 (91). 8250 (91). 8381 (94). — Wislizenus 152 (363b), 154 (128), 171 (9). 334 (10). 337 (10). — Wooton, E. O. 220 (127), 330 (29), 2845 (29). — Wooton et Standley 3605 (127). — Woronow 2693 (354a). 2715 (41), 2754 (450). 2818 (279), 2891 (279). — Woronow et Juzepezuk 2725 (51), 2729 (51), 5798 (113). — Wright, C. 64 (94), 460 (245), 461 (245). 468 (245), 469 (127), 470 (127), 472 A (204), 1053 (94), 1298 (332), 1361 (94a), 1524 (10), 1525 (10), 1528 (245), 1529 (29), 3156 (121). — Wynd et C. H. Mueller 20 (10), 605 (379).

Tabularum conspectus.

Pl. I. 1. *Salvia axillaris* Moc. et Sessé (§ 1. *Axillares*). — 2. *S. riparia* Kunth (§ 2. *Microsphace*).

Pl. II. 3. *S. Goldmanii* Fern. (§ 3. *Tomentellae*). — 4. *S. Purpusii* Brdge (§ 4. *Purpusiana*).

Pl. III. 5. *S. clinopodioides* Kunth (§ 5. *Cucullatae*). — 6. *S. albo-coerulea* Lind. (§ 6. *Fernaldia*).

Pl. IV. 7. *S. subincisa* Benth. (§ 7. *Caducae*). — 8. *S. scaposa* Epl. sp. n. (§ 8. *Lavanduloideae*).

Pl. V. 9. *S. quercetorum* Epl. sp. n. (§ 9. *Sigmoideae*). — *S. thyrsiflora* Benth. (§ 9. *Sigmoideae*).

Pl. VI. 11. *S. punctata* R. et P. (§ 10. *Punctatae*). — 12. *S. styphelus* Epl. sp. n. (§ 11. *Corrugatae*).

Pl. VII. 13. *S. discolor* Kunth (§ 12. *Discolores*). — 14. *S. prunelloides* Kunth (§ 13. *Uliginosae*).

Pl. VIII. 15. *S. Hintonii* Epl. sp. n. (§ 13. *Uliginosae*). — Supra: 16. *S. hamulus* Epl. sp. n. — 17. *S. tenella* Sw. (§ 14. *Micranthae*). — Supra: 18. *S. caymanensis* Miller et Uline.

Pl. IX. 19. *S. rhombifolia* R. et P. (§ 15. *Rhombifoliae*). — 20. *S. pichinchensis* Benth. (§ 16. *Siphonantha*).

Pl. X. 21. *S. psilostachya* Epl. (§ 17. *Macrostachyae*). — 22. *S. rumicifolia* Kunth (§ 18. *Hastatae*).

Pl. XI. 23. *S. cacaliaefolia* Benth. (§ 19. *Standleyana*). — 24. *S. vitifolia* Benth. (§ 20. *Blakea*).

Pl. XII. 25. *S. strobilanthoides* Wr. (§ 21. *Wrightiana*). — 26. *S. Buchii* Urb. (§ 22. *Gardoquiflorae*).

Pl. XIII. 27. *S. herbacea* Benth. (§ 23. *Bracteata*). — 28. *S. emaciata* Epl. (§ 24. *Glareosae*). — A. *S. reflexa* Hornem.

Pl. XIV. 29. *S. hispanica* L. (§ 25. *Potiles*). — 30. *S. lasiantha* Benth. (§ 26 *Mitratae*).

Pl. XV. 32. *S. hirtella* Vahl (§ 27. *Phoeniceae*). — 33. *S. exserta* Griseb. (§ 28. *Mineatae*).

Pl. XVI. 34. *S. colombiana* Epl. (§ 29. *Rubescentes*). — 35. *S. tubifera* Cav. (§ 30. *Biflorae*).

Pl. XVII. 36. *S. Haenkei* Benth. (§ 31. *Cylindriflorae*). — 37. *S. cubensis* Britt. et Wils. (§ 32. *Brittonia*).

Pl. XVIII. 38. *S. arduinervis* Urb. et Ekm. (§ 33. *Ekmania*). — 39. *S. subrotunda* St. Hil. (§ 34. *Subrotundae*).

Pl. XIX. 40. *S. phaenostemma* J. D. Smith (§ 35. *Sulcatae*). — 41. *S. calocalicina* Briq. (§ 36. *Flexuosae*).

Pl. XX. 42. *S. cinnabarina* M. et G. (§ 37. *Incarnatae*). — 43. *S. iodo* Epling sp. n. (§ 38. *Iodophyllae*).

Pl. XXI. 44. *S. perlonga* Fern. (§ 39. *Chariantha*). — 45. *S. Sanctae Luciae* Seem. (§ 40. *Membranaceae*).

Pl. XXII. 46. *S. rubiginosa* Benth. (§ 40. *Membranaceae*). — 47. *S. chamaedryoides* Cav. (§ 41. *Flocculosae*).

Pl. XXIII. 48. *S. Cavonii* Urb. (§ 42. *Tenuistachyae*). — 49. *S. melissodora* Lag. (§ 43. *Scorodonia*).

Pl. XXIV. 50. *S. Urica* Epling sp. n. (§ 44. *Uricae*). — 51. *S. cordata* Benth. (§ 45. *Rudes*).

Pl. XXV. 52. *S. leptophylla* Benth. (§ 46. *Farinaceae*). — 53. *S. rypara* Briq. (§ 47. *Malacophyllae*).

Pl. XXVI. 54. *S. decurrens* Epling (§ 48. *Flavidae*). — 55. *S. concolor* Lamb. (§ 49. *Dusenostachys*).

Pl. XXVII. 56. *S. Collinsii* J. D. Smith (§ 50. *Donnell-Smithia*). — 57. *S. Pennellii* Epl. sp. n. (§ 51. *Pennellia*).

Pl. XXVIII. 58. *S. semiatrata* Zucc. (§ 52. *Atratae*). — 59. *S. axilliflora* Epl. (§ 53. *Fendlera*).

Pl. XXIX. 60. *S. polystachya* Ort. (§ 54. *Polystachyae*). — 61. *S. connivens* Epl. sp. n. (§ 54. *Polystachyae*).

Pl. XXX. 62. *S. saccifera* Urb. et Ekm. (§ 55. *Urbania*). — 63. *S. simulans* Fern. (§ 56. *Carneae*).

Pl. XXXI. 64. *S. longimarginata* Briq. (§ 57. *Angulatae*). — 65. *S. ampelophylla* Epl. (§ 58. *Ampelophyllae*).

Pl. XXXII. 66. *S. Maxonii* Epl. sp. n. (§ 59. *Maxonia*). — 67. *S. pansamalensis* J. D. Smith (§ 60. *Insignifolia*).

Pl. XXXIII. 68. *S. mexicana* L. var. *minor* Benth. (§ 61. *Briquetia*).

INDEX NOMINUM

Alguelagum Gaudichaudii Briq. 52
Fenixanthes splendens Raf. 346
Hyptis nitida M. et G. 149
Jungia altissima Moench. 268
formosa Moench. 304
micrantha Moench. 78
Rhodochlamys speciosa Schauer 291
Rosmarinus officinalis L. 349
Salvia
Abbottii Urb. 75
acuminata R. et P. 311
acuminata Vent. 192
acuminatissima Vent. 192
acutifolia R. et P. 280
adenoclada Briq. 115
adenophora Fern. 282
adglutinans Lagasca 290
aequidistans Fern. 172
affinis Cham. et Schlecht. 331
ageratifolia Fern. 77
agglutinans Roem. et Schult. 290
Agnes Epl. 41
agrestis Vell. 349
alamosana Rose 45
albicans Fern. 168
albiflora M. et G. 255
— f. *caerulescens* Gray 256
— var. *caerulescens* Gray 256
albo-caerulea Lind. **32**: tab. III. 6
§*Albolanatae* 336
aliena Greene 247
altimitrata Epl. 108
altissima Pohl 308
Alvajaca Oersted 258
amabilis Kunth 349
amara Jacq. 174
amarissima Ort. 174
ambigens Briq. 294
amethystina J. E. Smith 262
amethystina Salisb. 349
amissa Epl. 187
amoena Sims 271
ampelophylla Epl. 262; tab. XXXI, 55
§*Ampelophyllae* 262
amplifrons Briq. 259
anaglypha Briq. 333
ancistrocarpha Fern. 274
angulata Benth. 253
§*Angulatae* 234
Salvia
angustiarum Epl.; 315; map 25
angustifolia Cav. 195
angustifolia Michx. 192
angustifolia var. *glabra* Gray 195
antennifera Briq. 139
approximata Briq. 178
— var. *Kuntzeana* Briq. 178
— var. *glabra* Gray 195
arborescens Urb. et Ekm. 98
— var. *dolichocarpa* Urb. et Ekm. 98
arbuscula Fern. 329
arduinervis Urb. et Ekm. 131: tab. XVIII, 38
arenaria St. Hil. 249
— var. *Sellowiana* Benth. 250
arguta Benth. 286
aridicola Briq. 180
aristulata M. et G. 338
arizonica Gray 59
— var. *huachucana* Jones 59
arthrocoma Fern. 245
articulata Epl. 284
aspera M. et G. 302
asperifolia Benth. 306
§*Asperifoliae* 306
aspidophylla Roem. et Schult. 103
assurgens Kunth 68
§**Atratae** Epl. 211
atriplicifolia Fern. 94
atrocalyx Epl. 87
atrocyanea Epl. 295
atrocaulis Fern. 205
— **atropaenulata** Epl. 270
§§**Australes** Epl. 215
avicularis Briq. 124
Axilliflorae 13
§**Axillares** 13; map 1a
axillaris Moc. et Sessé 13; tab. I. 1
axilliflora Epl. 212; tab. XXVIII, 59
ayavacensis Kunth 120, 121
azuensis Urb. 99
azurea Lam. 191
— subsp. ***media** Epl. 193
— subsp. ***mexicana** Epl. 193
— subsp. ***Pitcheri** Epl. 194
— subsp. ***typica** Epl. 192
— var. *grandiflora* Benth. 194
bahorucona Urb. et Ekm. 130
Balansae Briq. 189

Salvia
balaustina Pohl 283
ballotaeflora Benth. 22
— var. *Eulaliae* Fern. 21
— var. *pinguifolia* Fern. 21
Bangii Rusby 26
barbata Sessé et Moc. 349
bella Briq. 135
Benthamiana Gardn. 284
Benthami Pohl 185
bicolor Sessé et Moc. 336
bidens Urb. 75
biflora R. et P. 114
— var. *glabrata* Benth. 114
§*Biflorae* 113; map 12, b
biserrata M. et G. 205
§**Blakea** 94; map 10a
blepharophylla Brandegee 314
Blodgettii Chapm. 79
bogotensis Benth. 254
boliviana Van Houtte 122
Bonplandiana Dietr. 349
Boosiana Jacq. 270
Boosii Tratt. 271
Boucheana Kunth 297
brachyloba Urb. 100
brachyodonta Briq. 221
brachyphylla Urb. 227
— var. *subglabra* Urb. 226
brachypoda St. Loq. 349
§**Bracteata** Epl. 101; map 11. b
bracteata Poir. 104
§**Brandegeia** Epl. 314
brasiliensis Spreng. 346
brevicalyx Benth. 219
breviflora Moc. et Sessé 168
brevipes Benth. 185 (349)
Bridgesii Britton 124
§**Briquetia** Epl. 267
§**Brittonia** 126; map 13a
Buchii Urb. 100; tab. XII, 26
bullata Ort. 78
bullulata Benth. 53
bupleuroides Presl 145
caaguazensis Briq. 184
Cabonii Urb. 165
cacaliaefolia Benth. 94; tab. XI, 23
§**Caducae** Epl. 32; map 4, a
caesia Willd. 218
caesia Scheele 349
calaminthifolia Vahl 225
calocalicina Briq. 137
— var. *minor* Epl. 138, pl. XIX, 41

Salvia
calolophos Epl. 25
calycinflata M. et S. 291
camaraefolia Benth. 324
Camertoni Regel 140
campicola Briq. 183
candicans M. et G. 29
canescens Benth. 189
capitata Schlecht. 349
caracasana Briq. 252
§**Cardinales** Epl. 295
cardinalis Kunth 297
cardiophylla Benth. 178
cardiophylla Benth. 178
carnea Kunth 232
§*Carneae* 228
cataractarum Briq., 349
Cataria Briq. 220
caudata Epl. 243
Cavonii Urb. (sphalmate in tab.) 165; pl. XXIII, 48
caymanensis Millsp. et Uline 78, tab. VIII, 18
cedrosensis Greene 159
chalarothyrsa Fern. 48
chamaedrifolia Andr. 157
chamaedryoides Cav. 154
chamaedryoides Cav. 154; pl. XXII, 47
— var. *isochroma* Fern. 157
Chamaedrys Willd. 157
chapalensis Briq. 46
Chapmani Gray 58
§*Chariantha* 141; map 15b
chariantha Briq. 142
Chia Fern. 105
Chia Sessé et Moc. 106
chiapensis Fern. 264
chilensis Regel et Koern. 349
chionophylla Fern. 156
chorianthos Epl. 24
chrysantha M. et G. 107
chrysophila Schmidt 349
ciliata Benth. 133
ciliata Poir. 104
cinerarioides Briq. 178
cinnabarina M. et G. 139, pl. XX, 42
— var. *Pringleana* Briq. 139
— var. *typica* Briq. 139
circinnata Cav. 174
cladodes Fern. 150
clarendonensis Britton 324
clausa Vell. 349

Salvia
Claytoni Curtis 58
clinopodioides Kunth 31: pl. III, 5
coahuilensis Fern. 157
coccinea Juss. 133 (350)
— var. *minima* Fern. 133
— var. *pseudococcinea* Gray 133
cochabambensis Rusby 142
coelestina Carr. 349
coerulea Benth. 293
— var. *Regnellii* Benth. 294
§**Coeruleae** Epl. 293
cognata Urb. et Ekm. 155
collina Kunth 164
Collinsii J. D. Smith 209; pl. XXVII, 56
colombiana Epl. 111; pl. XVI, 34
comayaguana Standl. 264
comosa Peyritsch 64
— var. *hypoglauca* Fern. 64
compacta Kuntze 219
— var. *latifolia* Kuntze 219
— var. *oerstedtiana* Kuntze 220
— var. *irazuensis* Kuntze 219
concolor Lamb. 206; pl. XXVI, 55
confertiflora Pohl 347
confinis Fern. 29
congestiflora Epl. 71
connivens Epl. 216; pl. XXIX, 61
consimilis Epl. 251
Constanzae Urb. 99
§**Conzattiana** Epl. 301
Conzattii Fern. 28
cordata Benth. 179; pl. XXIV, 51
cordobensis Briq. 257
coriifolia Scheele 194
corrugata Vahl 51
§*Corrugatae* 50: map 6a
costaricensis Oersted 95
costata Epl. 319
Coulteri Fern. 30
crenata M. et G. 289
cretica Sessé et Moc. 349
cristalensis Urb. 126
crucis Epl. 44
Cruikshanksii Benth. 159
cryptanthos Schult. 104
cryptodonta Fern. 38
cubensis Britton et Wilson 126; pl. XVII, 37
§**Cucullatae** Epl. 31; map 3, a

Salvia
cuneifolia Benth. 30
cupheaefolia Kunth 116
curviflora Benth. 330
curta Epl. 70
§**curtiflora** Epl. 339
Curtiflorae Epl. 337
cuspidata R. et P. 22
cyanea Benth. 206
cyanea Sessé et Moc. 349
cyanea Fisch. 271
cyanifera Otto 34
cyaniflora Dietr. 296
cyanocephala Epl. 84
cyanotropha Epl. 164
cyclophylla Fern. 282
§*Cylindriflorae* 117; map. 12, b
cylindriflora Epl. 123
dasyantha Lem. 349
dasycalyx Fern. 48
debilis Epl. 233
decipiens M. et G. 97
decora Epl. 222
decurrens Epl. 203; pl. XXVI, 54
deltoidea Pers. 289
densiflora Benth. 99
derasa Benth. 136
desertorum Schmidt 306
dichlamys Epl. 276
dichroma La, Llave 349
discolor Kunth 53, 349; pl. VII, 13
discolor Sessé et Moc. 336
§*Discolores* 53; map 5b
disjuncta Fern. 283
Dombeyi Epl. 312
§**Donnellsmithia** Epl. 209
drymocharis Epl. 258
dryophila Epl. 45
Dugesiana Epl. 343
Dugesii Fern. 171
dumeticola Briq. 180
Durandiana Briq. 220
durantiflora Epl. 216
durifolia Epl. 180
§*Dusenostachys* 204
Earlei Wooton et Standley 190
ecuadorensis Briq. 271
§**Ekmania** 127; map 13, a
elata Poir. 192
elegans Vahl 139
— var. *sonorensis* Fern. 140
elongata Kunth 38

Salvia
elongata M. et G. 47
§§**Elscholtzioideae** 143
elscholtzioides Benth. 144
emaciata Epl. 103. tab. XIII, 28
eremitica Cerr. 349
eriocalyx Bert. 323
erythradena Briq. 26
erythropoda Rusby 349
§*Erythrostachys* 288
erythrostoma Epl. 317
excelsa Benth. 340
exserta Griseb. 109. tab. XV, 33
excisa R. et P. 114
fallax Fern. 244
farinacea Benth. 189 (349)
§*Farinaceae* 186
farinosa M. et G. 331
fasciculata Fern. 349
fastuosa Sessé et Moc. 291
§*Fendlera* 212
§**Fernaldia** 32; map 3. b
Fernaldii Standl. 79
festiva Epl. 264
filamentosa Tausch 349
filipes Benth. 222
fimbriata Kunth 241
firma Fern. 67
flaccida Fern. 261
flaccidifolia Fern. 258
§*Flavidae* 203
flexuosa Presl 219
§*Flexuosae* 135; map 14, a
flocculosa Benth. 164
§*Flocculosae* 153; map 16, b
floriana Howell 80
florida Benth. 335
§*Floridae* 335
fluviatilis Fern. 257
foliosa Benth. 82
formosa L'Herit. 304
Forreri Greene 60
foveolata Urb. et Ekm. 129
fruticetorum Benth. 341
fruticulosa Benth. 28
§§**Fruticosae** Epl. 248
fulgens Cav. 274
§**Fulgentes** Epl. 273
Funckii Briq. 90
fusca Epl. 245
galeata R. et P. 350
Galeottii Mart. 133
galinsogifolia Fern. 145
§**Gardoquiiflorae** Epl. 100; map 10. b

Salvia
gasterantha Briq. 277
gesneraeflora Lindl. et Paxton 282 (349)
Ghiesbreghtii Fern. 218
Gilliesii Benth. 23
— var. *glandulosa* Griseb. 23
glabra M. et G. 148
§§**Glabratae** Epl. 221
§**Glareosae** Epl. 102; map 11. b
glandulifera Cav. 350
glaucescens Pohl 133
glechomaefolia Kunth 62
§§**Glumacea** Epl. 243
Goldmanii Fern. 27; tab. II. 3
Gonzalezii Fern. 169
Goudotii Benth. 333
graciliflora M. et G. 331
gracilis Benth. 229
Grahami Benth. 277
grandiflora Neé 97
grandiflora Sessé et Moc. 275, 282, 297
grata Vahl 116
Greggii Gray 162
grewiaefolia S. Moore 307
griseifolia Epl. 160
guadalajarensis Briq. 36
guaranitica St. Hil. 293
Haenkei Benth. 124; pl. XVII. 36
haitiensis Urb. 248
hamata Brandegee 275
hamulus Epl. 72; tab. VIII. 16
hapalophylla Epl. 123
Hassleri Briq. 181
hastaefolia Epl. 91
§*Hastatae* 88; map 9. b
hederacea Larrañaga 72
Heerii Regel 122
helianthemifolia var. β Benth. 36
helianthemifolia Benth. 36
herbacea Benth. 101; tab. XIII, 27
Herrerae Epl. 344
heterotricha Fern. 196
— var. *multinervia* Fern. 196
§§**Hiantes** Epl. 258
Hilarii Benth. 285
hirsuta Jacq. 104
hirsuta Sessé et Moc. 174
Hintonii Epl. 73; tab. VIII. 15
hirta Kunth 119
hirta Schrank 350

Salvia
hirtella Vahl 108, tab. XV. 32
hispanica L. 105 (350), tab. XIV, 30
— var. *chionocalyx* Fern. 106
— var. *intonsa* Fern. 106
§*Hoehneana* 307
Holwayi Blake 299
hotteana Urb. et Ekm. 226
Humboldtiana Dietr. 26
Humboldtiana Schultes 40
Humboldtii Spreng. 26
humilis Benth. 350
hyemalis Boose 271
hypoglauca Briq. 64
§§*Hypolipontes* Briq. 73
hyptoides M. et G. 144
— var. *subspicata* Fern. 144
ianthina Otto et Dietr. 293
igualensis Fern. 218
incana M. et G. 274
incarnata Cav. 139
§**Incarnatae** 138; map 15a
inconspicua Benth 47
incumbens Urb. et Ekm. 156
incurvata R. et P. 350
infuscata Epl. 209
inornata Epl. 161
§**Insignifoliae** Epl. 267
insularum Epl. 79
integrifolia R. et P. 125
intonsa Epl. 249
involucrata Cav. 300
iodantha Fern. 328
§**Iodanthae** Epl. 327
iodochroa Briq. 231
iodophylla Epl. 141; pl. XX, 43
§**Iodophyllae** Epl. 141; map 15b
ionocalyx Epl. 231.
irazuensis Fern. 230
Isabellei Briq. 178, 183
itatiaiensis Dusén 250
jaliscana Briq. 256
jamaicensis Fawc. 323
Jurgensenii Briq. 254
Karwinskii Benth. 298
Keerlii Benth. 169
Kellermannii J. D. Smith 210
§*Killipiana* 317
Killipiana Epl. 233
Kuntzeana Briq. 142
lachnaiclada Briq. 130
lachnostachys Benth. 71
lachnostoma Epl. 313

Salvia
laevigata Kunth 300
laevis Benth. 64
lamiifolia Jacq. 270 (350)
lanceaefolia Poir. 102
lanceolata Brouss. 102
lanceolata Larrañaga 69
Langlassei Fern. 149
languidula Epl. 246
lanicalyx Epl. 190
lantanaefolia M. et G. 107
lasiantha Benth. 107; pl. XIV, 31
lasiocephala Hook. et Arn. 145
latens Benth. 318
lateriflora Fern. 17
latibracteata Urb. 128
latifolia A. Anders. 271
laurifolia Epl. 318
lavandulaefolia Spreng. 40
§**Lavanduloideae** 34; map 4, b
lavanduloides Kunth 40
— var. *latifolia* Benth. 42
laxa Benth. 22
laxispicata Epl. 252
Lemmoni Gray 279
lenta Fern. 217
lentiginosa Brandegee 62
Leonia Benth. 350
§*Leonuroideae* 304
leonuroides Glox. 304
lepida Epl. 208
leptophylla Benth. 195; pl. XXV, 52
leptostachys Benth. 239
leucantha Cav. 336
leucanthera Vis. 350
leucocalyx Briq. 324
leucocephala Kunth 308
§*Leucocephalae* 308
leucoclada Benth. 159
libanensis Rusby 291
lilacina Fern. 218
linarioides Hort. 350
Lindenii Benth. 298
linearis R. et P. 279
linearis Sessé et Moc. 195
lineata Benth. 275
lineatifolia Lag. 278
linifolia M. et G. 195
Littae Vis. 330
Lobbii Epl. 84
longiflora R. et P. 312
longiflora Sessé et Moc. 140

Salvia
longifolia Willd. 39
longifolia Nutt. 194
longiflora Willd. 322
§*Longiflorae* 310 (342)
longimarginata Briq. 253; pl. XXXI, 64
longispicata M. et G. 256
longistyla Benth. 338
lophantha Benth. 150
§§**Lophanthoideae** Epl. 146
lophanthoides Fern. 148
Lorentzii Griseb. 24
loxensis Benth. 198
Lozani Fern. 67
lucida Briq. 180
lupulina Fern. 269
lutea Kunth 51
lycioides Gray 161
Macbridii Epl. 280
macellaria Epl. 162
macrantha Schlecht. 350
macrocalyx Gardn. 287
macrophylla Benth. 89
macrostachya Kunth 87
§*Macrostachyae* 85; map 9, a
madrensis Seem. 207
malacophylla Benth. 199
§**Malacophyllae** Epl. 197
Marci Epl. 320
Mariana Mart. 286
Martensii Gal. 230
martinicensis Sessé et Moc. 15
Mathewsii Benth. 86
Matico Griseb. 201
— var. *cuneata* Griseb. 201
mattogrossensis Pilger 344
Matudae Epl. 331
§**Maxonia** Epl. 263
Maxonii Epl. 266; pl. XXXII, 66
Mayorii Briq. 350
mazatlanensis Fern. 255
melaleuca Epl. 111
melanocalyx Briq. 294
melissaeflora Benth. 345
melissifolia Desf. 268
melissodora Lag. 171 (350); pl. XXIII, 49
membranacea Benth. 230
— var. *acuminata* Benth. 260
— var. *villosula* Benth. 230
§*Membranaceae* 143; map 16, c
membranicalyx Epl. 260
mendax Epl. 96

Salvia
mentiens Pohl 341
Mexiae Epl. 153
mexicana L. 268 (349)
— var. *major* Benth. 268
— var. *minor* Benth. 270; pl. XXXIII, 68
Micheliana Briq. 132
michoacana Fern. 328
micrantha Vahl 78
— var. ***Blodgettii** Epl. 79
§*Micranthae* 73; map 7, b
microcalyx Poir. 139
microcalyx Scheele 140
microculis Poir. (sphalmate!) 139
microdictya Urb. et Ekm. 322
microphylla Kunth 277
— var. *canescens* Gray 278
— var. **neurepia** Epl. 278
— var. *Wislizeni* Gray 278
microphylla Sessé et Moc. 171
§*Microsphace* 14; map 1, b
minarum Briq. 181
§*Mineatae* 109; map 12, a
miniata Fern. 292
misella Kunth 16
§*Misellae* Briq. 14
mitis R. et P. 199
§**Mitratae** 106; map 11 a
Mocinoi Benth. 151
modica Epl. 276
Molina Fern. 256
mollis Kunth 263
mollissima M. et G. 133
monantha Brandegee 18
monclovensis Fern. 207
moniliformis Fern. 37
monochila J. D. Smith 339
montana Gardn. 249
montecristina Urb. et Ekm. 224
mornicola Urb. et Ekm. 225
moschata Kunth 327
mucidistachys Epl. 121
mucidiflora Fern. 246
mucidistachys Epl. 121
Muelleri Epl. 163
multiramea Fern. 47
multispicata Rusby 144
muralis Fern. 290
§**Muricatae** Epl. 288
muscarioides Fern. 40
myriantha Epl. 248
nana Kunth 65

Salvia
— var. *eglandulosa* Epl. 66
natalis Epl. 265
Nelsonii Fern. 168
nemoralis Dusén 250
neo-hispanica Briq. 106
neovidensis Benth. 341
nepetifolia Poir. 104
nepetoides Kunth 44
nervata M. et G. 339
nervosa Benth. 182
neurepia Fern. 278
nitida Benth. 149
nitidifolia Ort. 268
nitidula Briq. 183
§**Nobiles** Epl. 280
oaxacana Fern. 302
oblongifolia Mart. et Gal. 197
obscura Benth. 16
obtorta Epl. 217
obtusa M. et G. 277
obtusifolia Sessé et Moc. 350
obumbrata Epl. 272
obvallata Epl. 241
occidentalis Sw. 15
— var. *Garberi* Chapm. 17
occidua Epl. 173
occlusa Epl. 348
occultiflora Epl. 81
ochrantha Epl. 54
ocimifolia Epl. 261
odoratissima Sessé et Moc. 277
oligantha Dusén 208
ombrophila Dusén 000
oppositiflora R. et P. 116
orbicularis Benth. 78
Orbignaei Benth. 142
oreopola Fern. 62
oresbia Fern. 315
orizabensis Fern. 274
oroana Urb. et Ekm. 131
orophila Briq. 334
orthostachys Epl. 112
Ottoschulzii Urb. et Ekm. 130
— var. *neurocalyx* Urb. et Ekm. 130
ourophylla Briq. 258
ovalifolia St. Hil. 183
— var. *villosa* Benth. 182
oxyphora Briq. 309
oxyphylla Brandegee 331
pachypoda Briq. 183
palaefolia Kunth 93
Palafoxiana Sessé et Moc. 300

Salvia
pallida Benth. 188
palmae Epl. 44
Palmeri Gray 316
§**Palmerostachys** Epling 316
pannosa Fern. 169
pansamalensis J. D. Smith 267; pl. XXXII, 67
papilionacea Cav. 268
paposana Philippi 82
paraguariensis Briq. 180
paranensis Dusén 345
parciflora Urb. 76
parquerensis Moc. et Sessé 31
parrasana Brandegee 60
Parryi Gray 29
parvifolia Sessé et Moc. 350
patens Cav. 97
patzquarensis Sessé et Moc. 31
pauciflora Kunth 350
pauciserrata Benth. 136
paupercula Epl. 173
§*Pavonia* 279
Pavonii Benth. 49
pendula Sessé et Moc. 297
penduliflora Epl. 242
§**Peninsulares** Epl. 319
peninsularis Brandegee 320
§**Pennellia** Epl. 211
Pennellii Epl. 211; pl. XXVII, 57
perblanda Epl. 221
perlonga Fern. 142; pl. XXI, 44
perlucida Epl. 260
permixta Briq. 258
perplicata Epl. 247
persicifolia St. Hil. 286
personata Epl. 242
petiolaris Kunth 92
pexa Epl. 303
phaenostemma J. D. Smith 135; pl. XIX, 40
phlomoides Cav. 104
phoenicea Kunth 108
§*Phoeniceae* 108; map 12a
§§*Phthartae* Briq. 73
pichinchensis Benth. 85; pl. IX, 20
pilosa Vahl 82
pinetorum Urb. 128
pinguifolia Wooton et Standl. 21
Pitcheri Torr. 194
Pittieri Briq. 107
platycheila Gray 187
platyphylla Briq. 44

Salvia
platystoma Epl. 199
plumosa R. et P. 304
plurispicata Epl. 222
podadena Briq. 77
polystachya Ort. 218 (349); pl. XXIX, 60
— subsp. *Pittieri* Briq. 220
— var. *albicans* Fern. 218
— var. *caesia* Briq. 218
— var. *philippensis* Fern. 218
— var. *potosina* Briq. 216
— var. *seorsa* Fern. 218
§**Polystachyae** Epl. 213, 217
Popenoei Blake 299
populifolia Fern. 107
§**Potiles** 105
potus Epl. 105
praeclara Epl. 121
praeterita Epl. 227
prasiifolia Benth. 246
primulaeformis Epl. 166
Pringlei Robins. et Greenm. 322
prismatica Cav. 105
Privoideae Briq. 14
privoides Benth. 16
procumbens R. et P. 15
procurrens Benth. 72
propinqua Benth. 179
prostrata Hook. 76
protracta Benth. 47
proxima M. et G. 96
pruinosa Fern. 27
§**Pruinosae** Epl. 316
prunelloides Kunth 63; pl. VII, 14
prunifolia Fern. 68
prysmatica Cav. 350
pseudoavicularis Briq. 124
pseudochia Sessé et Moc. 350
pseudococcinea Jacq. 133
pseudocomosa Epl. 63
pseudogracilis Epl. 229
pseudolantana Epl. 325
pseudoprivoides Epl. 18
pseudoserotina Epl. 80
psilantha Epl. 122
psilostachya Epl. 87; pl. X. 21
pteroura Briq. 266
puberula Fern. 301
pubescens Benth. 290
pulchella DC. 274
punctata Benth. 50
punctata R. et P. 49; pl. VI, 11
— var. *glabra* Epl. 50

Salvia
§*Punctatae* 49; map 5b
punicea M. et G. 140
purpurascens M. et G. 229
purpurea Cav. 331
— var. *pubens* Gray 331
§*Purpureae* 329
purpurina La Llave 350
§**Purpusiana** 30; map 3a
Purpusii Brandegee 30; pl. II. 4
pusilla Fern. 62
pustulata Benth. 53
pyrifolia Dombey 305
quercetorum Epl. 46; pl. V. 9
quitensis Benth. 118
racemosa R. et P. 350
radicans Poir. 350
radula Epl. 52
ramosa Brandegee 170
ramosissima Fern. 161
rectiflora Vis. 338
recurva Benth. 206
reducta Epl. 168
reflexa Hornem. 102; pl. XIII, 29
Regla Cav. 289
Regnelliana Briq. 305
remissa Epl. 245
remota Benth. 38
reptans Jacq. 195
reticulata M. et G. 62
retinervia Briq. 25
revoluta R. et P. 279
rhinosina Griseb. 202
— var. *arborescens* Griseb. 203
rhodostephana Epl. 91
rhombifolia R. et P. 81; pl. IX, 19
— var. *glabrior* Benth. 82
— var. β Hooker 159
rhombifolia Sessé et Moc. 63; map 8a
rhombifolia Sessé et Moc. 63
§*Rhombifoliae* 80; map 8, a
rhomboides Sessé et Moc. 222
rhyacophila Epl. 239
rigida Benth. 181
riparia Kunth 16; pl. II. 2
rivularis Gardn. 285
Roezli Scheidw. 291
Rojasii Briq. 178
rosea Vahl 133
Rosei Fern. 316
roscida Fern. 244
rosmarinoides St. Hil. 181
rostellata Epl. 66
Rouyana Briq. 189

Salvia
rubescens Kunth 112
§*Rubescentes* 110; map 12, a
rubiginosa Benth. 152; pl. XXII. 46
— var. *hebephylla* Fern. 152
rubropunctata Robins. et Fern. 28
§**Rudes** Epl. 176
§§**Rudes** Epl. 251
rufa Epl. 346
rufida Willd. 333
rufula Kunth 333
rumicifolia Kunth 91
rupicola Fern. 172
Rusbyi Britton 125
rypara Briq. 200; pl. XXV, 53
saccifera Urb. et Ekm. 226; pl. XXX, 62
§§**Sacculus** Epl. 215
sacculus Epl. 216
sagittata R. et P. 90
salicifolia Pohl 286
saligna Willd. 26
saltuensis Fern. 151
Sanctae-Luciae Seem. 150; pl. XXI, 45
sarmentosa Epl. 160
savannarum Briq. 350.
scabiosaefolia Lam. 350
scabrata Britton et Wils. 288
scabrida Pohl 306
scandens Epl. 312
scaposa Epl. 35; pl. 4. 8
Schaffneri Fern. 274
Schiedeana Stapf 106
scopulorum Britt. et Wils. 127
§**Scorodonia** Epl. 166
scorodonia Benth. 171
scorodoniaefolia Poir. 171
— var. *crenaea* Fern. 171
— var. *subsessilis* Benth. 173
scrobiculata Meyen 114
§§**Scutellarioideae** Epl. 261
scutellarioides Kunth 92
scytinophylla Briq. 180
secunda Benth. 348
— var. *tomentella* Benth. 348
§**Secundae** 342
secundiflora Rusby 324
Seemannii Fern. 255
selleana Urb. 100
Sellowiana Benth. 287
semiatrata Zucc. 212; pl. XXVIII, 58

Salvia
semperflorens La Llave 291
serotina L. 77
— var. *sagittaefolia* Millsp. 78
serpyllifolia Fern. 158
serrata Benth. 188
Sessei Benth. 291
sessilifolia Gray 315
setosa Fern. 17
setulosa Fern. 61
Shannoni J. D. Smith 210
sidaefolia Mart. et Gal. 230
sideritidis Presl 160
sideritidis Vahl 104
§**Sigmoideae** Epl. 42; map 5. a
siguatepequensis Standl. 298
silvarum Epl. 272
§**Silvicolae** Epl. 292
similis Brandegee 188
simulans Fern. 231; pl. XXX, 63
sinaloensis Fern. 69
§*Siphonantha* 83; map 8. b
siphonantha Briq. 85
§*Skeptostachys* 305
sophrona Briq. 250
sordida Benth. 333
speciosa Presl 86
spectabilis Kunth 97
speirematoides Wr. 127
sphacelifolia Epl. 177
§**Sphacelioides** Epl. 303
sphacelioides Benth. 252
spicata Schult. 26
spicata Torr. 29
spicata Willd. 164
splendens Ker-Gawl. 346
splendens Sellow 346
Sprucei Briq. 120
squalens Kunth 114
squarrosa Scheidw. 350
stachydifolia Benth. 201
stachyoides Kunth 39
staminea M. et G. 97
§**Standleyana** 93, map 10. a
stolonifera Benth. 297
striata Benth. 115
stricta Sessé et Moc. 38
strictiflora Hook. 116
strobilanthoides Wr. 99; pl. XII, 25
styphelus Epl. 52; pl. VI, 12
subaequalis Epl. 225
subalpina Urb. et Ekm. 129
subglabra Urb. 226

Salvia
subhastata Epl. 303
subincisa Benth. 33; pl. IV, 7
subpatens Epl. 97
subrotunda St. Hil. 132; pl. XVIII, 39
§*Subrotunda* 132; map 13, b
subrubens Epl. 335
§**Sulcatae** 134; map 14, b
Tafallae Benth. 82
Tatei Briq. 350
tehuacana Fern. 33
tenella Sw. 75; pl. VIII, 17
tenuiflora Epl. 342
§**Tenuistachya** 165
tenuistachya Rusby 253
tepicensis Fern. 173
Teresae Fern. 35
tetragona Moench. 105
Theresae Briq. 120
thomasiana Urb. 76
Thormanni Urb. 131
thymiflora Willd. 271
thymoides Benth. 158
thyrsiflora Benth. 47; pl. V, 10
tiliaefolia Vahl 241
— var. *cinerascens* Fern. 240
— var. *rhyacophila* Fern. 239
§§**Tiliaefoliae** Epl. 239
Tippenhaueri Urb. 75
tiraquensis Briq. 200
tolimensis Kunth 334
tomentella Pohl 377
§*Tomentellae* 18; map, 2, a, b
tonalensis Brandegee 215
Tonduzii Briq. 299
tortuensis Urb. 224
tortuosa Kunth 326
— var. *detonsa* Epl. 326
tovariensis Briq. 253
Townsendii Fern. 328
trachyphylla Epl. 120
trichandra Briq. 63
trichostemmoides Pursh 103
trichostyla Bisch. 189
tricolor Lem. 350
tricuspidata M. et G. 66
truxillensis Briq. 112
§*Tuberosae* 309
tubifera Cav. 322, pl. XVI, 35
tubiflora Smith 114
Tubiflorae 321

Salvia
§§**Tubiformes** Epl. 296
tubiformis Klotzsch 338
tubulosa Epl. 311
Tuerkheimii Urb. 128
turcica Sessé et Moc. 350
uliginosa Benth. 69
— var. *rufescens* Benth. 70
§*Uliginosae* 54; map 6, b; 7, a
§**Urbania** Epl. 223
umbratica Epl. 272
umbraticola Epl. 265
§*Umbratiles* 272
umbratilis Fern. 268
unicostata Fern. 65
uncinata Urb. 129
urolepis Fern. 240
urticifolia L. 58
Urica Epl. 175; pl. XXIV, 50
§**Uricae** Epl. 174
uruguayensis St. Hil. 189
uruapana Fern. 240
variana Epl. 170
velutina Benth. 337
venosa Fern. 339
ventricosa Sessé et Moc. 300
§§**Ventricosae** Epl. 298
venulosa Epl. 325
venusta Kunth 263
verecunda Epl. 146
veronicaefolia Gray 67
vestita Benth. 310
villosa Fern. 61
vinacea Wooton et Standley 20
violacea Don 271
violacea R. et P. 350
virgata Ort. 195
viridifolia Rusby 252
viscida St. Hil. 185
viscosa Sessé et Moc. 17
vitifolia Benth. 96, pl. XI, 24
Wagneriana Polak. 299
Warzewicziana Regel 350
Weberbaueri Epl. 313
Wilsonii Urb. 271
§**Wrightiana** 98; map 10, b
Wunschmanni Krug. et Urb. 99
xalapensis Benth. 257
zacuapanensis Brandegee 151
zacualpanensis Briq. 350
Sclarea mexicana Dill. 268
Sphacele Gaudichaudii Briq. 51
Teucrium rotundifolium Poir. 72



AXILLARES

A- axillaris



TOMENTELLAE

A - vinacea
B - pinguifolia
C - ballotaeflora
D - pruinosa
E - Goldmanii
F - fruticulosa
G - rubropunctata
H - Parryi
K - candicans
L - Coulteri

SCALE

TOMENTELLAE

A - Humboldtiana
B - cuspidata
C - Gilliesii
D - retinervia
E - Bangii
F - chrianthos
G - calolophos
H - Lorentzii

CUCULLATAE

A- clinopodioides

PURPUSIANA

B-Purpusii

FERNALDIA

A- albocaerulea

CADUCAE

A- subincisa
B- tehuacana

SCALE

LAVANDULOIDEAE

A- scaposa
B- Teresae
C- helianthemifolia
D- guadalajarensis
E- moniliformis
F- remota
G- cryptodonta
H- stricta
K- longifolia
L- muscarioides
M- Agnes
● - lavanduloides

SCALE

SIGMOIDEAE

A- platyphylla
B- crucis
C- nepetoides
D- dryophila
E- alamosana
F- chapalensis
G- quercetorum
H- inconspicua
K- thyrsiflora
L- chalorothyrsa
M- dasycalyx

PUNCTATAE

A-punctata
B-Pavonii

DISCOLORES

C-discolor


ULIGINOSAE
A-uliginosa
B-curta
C-congestiflora
D-lachnostachys
E-procurrens



Fedde, Rep. Beih. CX. Map 6.

ULIGINOSAE

A- urticaefolia
B- arizonica
C- Forreri
D- setulosa
E- oreopola
F- villosa
G- pusilla
H- glechomaefolia
K- prunelloides
L- pseudocomosa
M- laevis
N- unicostata
O- nana
P- tricuspidata
R- rostellata
S- firma
T- veronicaefolia
U- Lozani
V- assurgens
W- prunifolia
X- sinaloensis
Y- hamulus
Z- Hintonii

MICRANTHAE

A- tenella
B- thomasiana
C- parciflora
D- prostrata
E- serotina
F- podadena
G- caymanensis
H- micrantha
K- Fernaldii
L- insularum
M- pseudoserotina

Galapagos Islands
James Isl. - D
Chatham Isl. - L
Charles Isl. - M


A
B
C
SIPHONANTHA
A- cyanocephala
B- Lobbii
C- pichinchensis



Fedde, Rep. Beih. CX. Map 8.



HASTATAE
A – macrophylla
B – Funckii
C – sagittata
D – rhodostephana
E – rumicifolia
F – scutellarioides
G – palaefolia



Fedde, Rep. Beih. CX. Map 9.

BLAKEA

A- costaricensis
B- vitifolia
C- mendax
D- patens
E- subpatens

STANDLEYANA

F- cacaliaefolia

WRIGHTIANA

A- arborescens
B- strobilanthoides
C- densiflora

GARDOQUIFLORAE

D- Buchii
E- brachyloba
F- selliana

MITRATAE

A- lasiantha
B- altimitrata

GLAREOSAE

A-reflexa
B-emaciata
C-hirsuta
D-potus

BRACTEATA

E-herbacea

SCALE



CYLINDRIFLORAE
A- quitensis
B- hirta
C- trachyphylla
D- Sprucei
E- praeclara
F- Heerii
G- psilantha
H- cylindriflora
I- hapalophylla
J- Haenkei
K- Rusbyi
L - integrifolia
M - mucidistachys



Fedde, Rep. Beih. CX. Map 12.

BRITTONIA
A-cubensis
B-speirematoides

EKMANIA
C-Tuerkheimii
D-uncinata
E-foveolata
F-Ottoschulzii
G-lachnaiclada
H-Thormanni
K-arduinervis

SUBROTUNDAE
A-coccinea
B-subrotunda

FLEXUOSAE

A- bella
B- calocalicina
C- derasa
D- pauciserrata

SULCATAE

A - phaenostemma

INCARNATAE

A-cinnabarina

B-elegans

CHARIANTHA

A-perlonga

IODOPHYLLAE

B-iodophylla

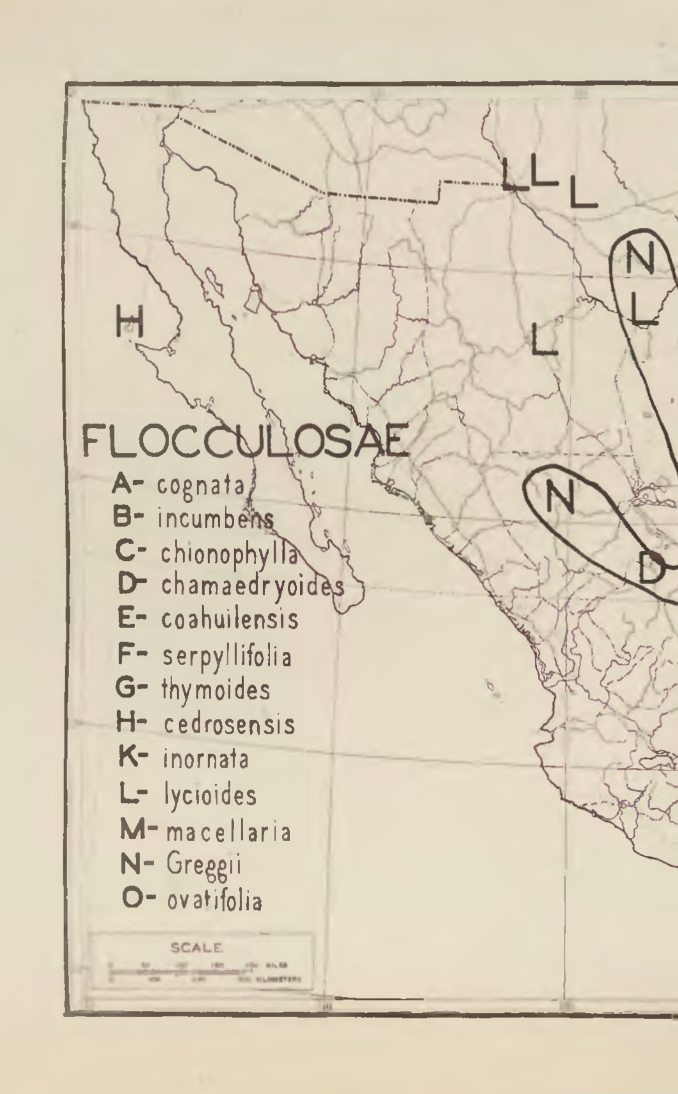
S. Orbignaei

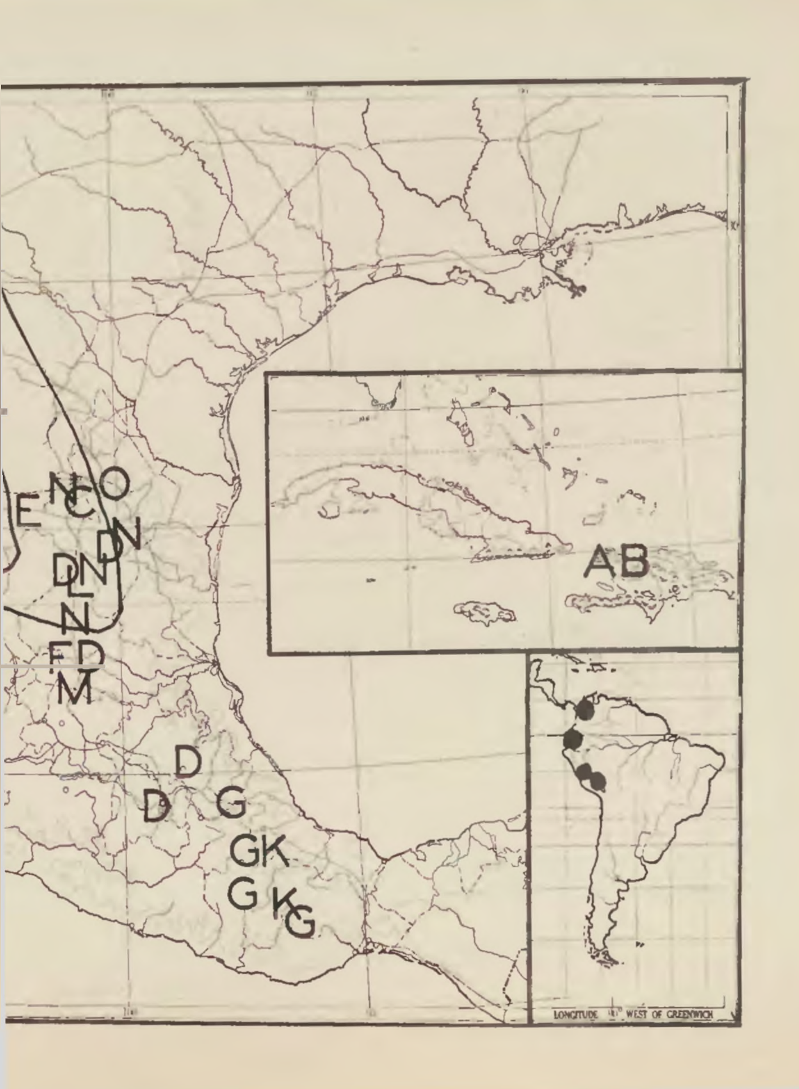
MEMBRANACEAE

A- hyptoides
B- lasiocephala
C- galinsogifolia
D- verecunda
E- glabra
F- lophanthoides
G- nitida
H- Langlassei
K- Sanctae Luciae
L- lophantha
M- zacuapanensis
N- Mocinoi
O- rubiginosa
P- Mexiae

FLOCCULOSAE

A- cyanotropha
B- Cruikshanksii
C- griseifolia
D- flocculosa
E- sarmentosa


FLOCCULOSAE
A- cognata
B- incumbens
C- chionophylla
D- chamaedryoides
E- coahuilensis
F- serpyllifolia
G- thymoides
H- cedrosensis
K- inornata
L- lycioides
M- macellaria
N- Greggii
O- ovatifolia
SCALE
H
L
N
D



Fedde, Rep. Beih. CX. Map 17.

TENUISTACHYA

A- Cabonii
B- primulaeformis

SCORODONIA

A- breviflora
B- reducta
C- Keerlii
D- pannosa
E- ramosa
F- variana
G- melissodora
H- rupicola
K- aequidistans
L- tepicensis
M- paupercula
N- occidua



RUDES
M-cardiophylla
N-cordata
O-propinqua
P-durifolia
Q-lucida
R-rosmarinoides
S-nervosa
T-caaguazuensis
U-brevipes
V-viscida
W-ovalifolia
A-sphacelifolia


URICAE
A- amarissima
B- Urica
SCALE
A
B

RUDES

A- sphacelifolia

FARINACEAE

A- platycheila
B- amissa
C- similis
D- farinacea
E- lanicalyx
F- azurea
G- leptophylla
H- heterotricha
K- oblongifolia

S. pallida



BCA
DUSENOSTACHYS
A-oligantha
B-lepida
FLAVIDAE
C-decurrens



Fedde, Rep. Beih. CX. Map 21.

DUSĖNOSTACHYS

A- biserrata
B- flaccidifolia
C- atrocaulis
D- recurva
E- concolor
F- madrensis
G- monclovensis

DONNELLSMITHIA

A- Collinsii
B- Shannoni
C- infuscata

PENNELLIA

A - Pennellii

ATRATAE

B - semiatrala

A

B B B

FENDLERA

A - axilliflora

A

POLYSTACHYAE

A- tonalensis
B- Sacculus
C- connivens
D- obtorta
E- lenta
F- igualensis
G- polystachya
H- compacta
K- plurispicata
L- brachyodonta
M- filipes
N- decora
O- perblanda
P- durantiflora

URBANIA

A - tortuensis
B - montecristina
C - subaequalis
D - calaminthifolia
E - mornicola
F - saccifera
G - hotteana
H - subglabra
K - brachyphylla
L - praeterita


ANGULATAE
A – arenaria
B – itatiaiensis
C – nemoralis
D – consimilis
E – laxispicata
F – sphaceltoides
G – ocimifolia
H – longimarginata
I – angulata
J – penduliflora
K – amplifrons
L – membranicalyx
M – perlucida
N – tiliaefolia
O – obvallata
P
Q – intonsa
R – bogotensis


CARNEAE
A- gracilis
B- pseudogracilis
C- membranacea
D- iodochroa
E- simulans
F- carnea
G- debilis
H- Killipiana
J- ionocalyx

A-rhyacophila
B-leptostachys
C-urolepis
D-uruapana
E-caudata
F-roscida
G-fallax
H-arthrocoma
I-remissa
J-fusca
K-mucidiflora
L-prasiifolia
M-aliena
N-perplicata
O-myriantha
P-haitensis
Q-mazatlanensis
R-longispicata
S-Seemannii
T-fluviatilis
U-xalapensis
V-drymocharis
W-Alvajaca
X-flaccida

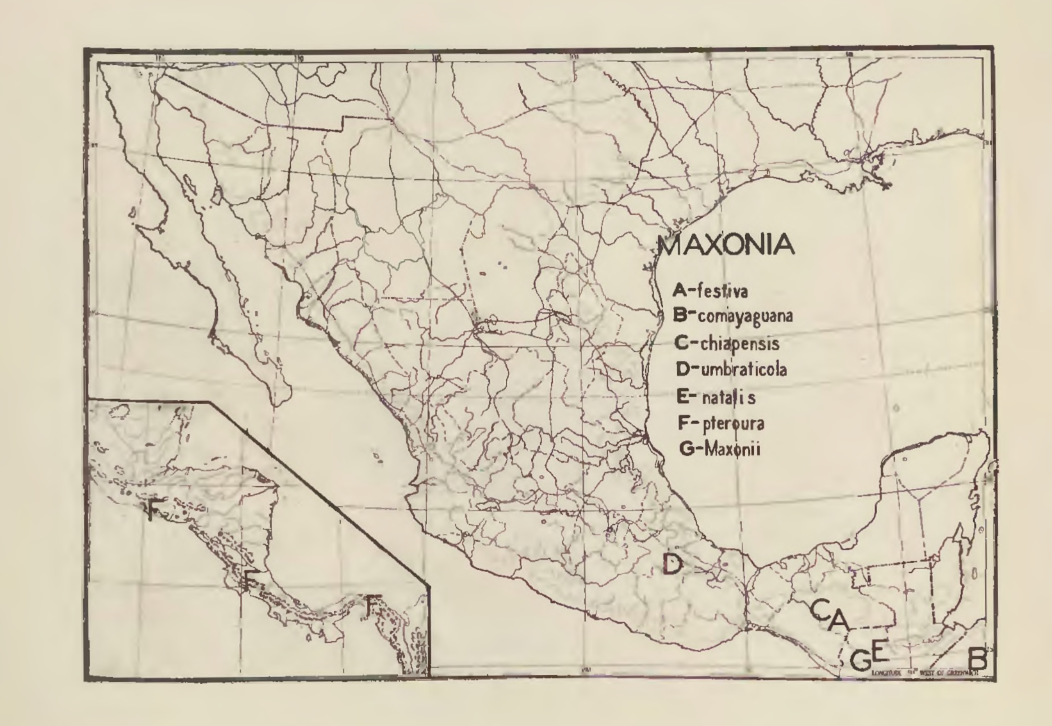
ANGULATAE

Y- albiflora
Z- languidula

SCALE

Fedde, Rep. Beih. CX. Map 26.

LONGITUDE 110° WEST OF GREENWICH



MAXONIA
A-festiva
B-comayaguana
C-chiapensis
D-umbraticola
E-natalis
F-pteroura
G-Maxonii
D
C
A
G
E
B
F
F
F



Fedde, Rep. Beih. CX. Map 27.

BRIQUETIA

A-umbratilis
B-mexicana
C-mexicana minor
D-lamiifolia
E-atropaenulata

INSIGNIFOLIAE

X-pansamalensis

S. ecuadorensis

FULGENTES

A-pulchella
B-fulgens
C-lineata
D-dichlamys
● microphylla
▲ microphylla neurepia
■ microphylla Wislizeni
E-modica

SCALE

PAVONIA

W- revoluta

X- Macbridii

NOBILES

A- gesneraeflora

B- adenophora

C- disjuncta

MURICATAE

A- scabrata

ERYTHROSTACHYS

A- Regla

B- pubescens

C- Sessei

D- libanensis



B
A
A
A
A
A
A
A
A
COERULEAE
A- atrocyanea
B- guaranitica


SILVICOLAE
A - miniata
A
A
SCALE

CARDINALES

A- cardinalis
B- stolonifera
C- siguatepequensis
D- Karwinskii
E- Holwayi
F- Wagneriana
G- involucrata
H- puberula

CONZATTIANA

C- aspera
D- oaxacana
E- pexa

SPHACELIOIDES

B- subhastata

SCALE


D
C
C
A
A
B
HOEHNEANA
A- grewiaefolia
B- altissima
TUBEROSAE
C- oxyphora
LEUCOCEPHALAE
D- leucocephala



Fedde, Rep. Beih. CX. Map 33.



1. *Salvia axillaris* Moc. et Sessé (§ 1. *Axillares*)



2. *Salvia riparia* Kunth (§ 2. *Microsphace*).



3. *Salvia Goldmanii* Fern. (§ 3. *Tomentellae*).



4. *Salvia Purpusii* Brdge. (§ 4. *Purpusiana*).

Fedde, Rep. Beih. CX. Pl. II.



5. *Salvia clinopodioides* Kunth (§ 5. *Cucullatae*).



6. *Salvia albo-caerulea* Lind. (§ 6. *Fernaldia*).



7. *Salvia subincisa* Benth. (§ 7. *Caducae*).



8. *Salvia scaposa* Epl. (§ 8. *Lavanduloideae*).

Fedde, Rep. Beih. CX. Pl. IV.



9. *Salvia quercetorum* Epl. (§ 9. *Sigmoideae*).



10. *Salvia thyrsiflora* Benth. (§ 9. *Sigmoideae*).



11. *Salvia punctata* R. et P. (§ 10. *Punctatae*).



12. *Salvia styphelus* Epl. (§ 11. *Corrugatae*).

Fedde, Rep. Beih. CX. Pl. VI.



13. *Salvia discolor* Kunth (§ 12. *Discolores*).



14. *Salvia prunelloides* Kunth (§ 13. *Uliginosae*).



15. *Salvia Hintonii* Epl. (§ 13. *Uliginosae*).
Supra 16. *S. hamulus* Epl.



17. *Salvia tenella* Sw. (§ 14. *Micranthae*).
Supra 18. *S. caymanensis* Millsp. et Uline.



19. *Salvia rhombifolia* R. et P. (§ 15. *Rhombifoliae*).



20. *Salvia pichinchensis* Benth. (§ 16. *Siphonantha*).



21. *Salvia psilostachya* Epl. (§ 17. *Macrostachyae*).



22. *Salvia rumicifolia* Kunth (§ 18. *Hastatae*).



23. *Salvia cacaliaefolia* Benth. (§ 19. *Standleyana*).



24. *Salvia vitifolia* Benth (§ 20. *Blakea*).

Fedde, Rep. Beih. CX. Pl. XI.



25. *Salvia strobilanthoides* Wr. (§ 21. *Wrightiana*).



26. *Salvia Buchii* Urb. (§ 22. *Gardoquiiflorae*).



27. *Salvia herbacea* Benth. (§ 23. *Bracteata*).



28. *Salvia emaciata* Epl. (§ 24. *Glareosae*).
A: 29. *S. reflexa*.



30. *Salvia hispanica* L. (§ 25. *Potiles*).



31. *Salvia lasiantha* Benth. (§ 26. *Mitratae*).



32. *Salvia hirtella* Vahl (§ 27. *Phoeniceae*).



33. *Salvia exserta* Griseb. (§ 28. *Mineatae*).

Fedde, Rep. Beih. CX. Pl. XV.



34. *Salvia colombiana* Epl. (§ 29. *Rubescentes*).



35. *Salvia tubifera* Cav. (§ 30. *Biflorae*).



36. *Salvia Haenkei* Benth. (§ 31. *Cylindriflorae*).



37. *Salvia cubensis* Britt. et Wils. (§ 32. *Brittonia*).



38. *Salvia arduinervis* Urb. et Ekm. (§ 33. *Ekmania*).



39. *Salvia subrotunda* St. Hil. (§ 34. *Subrotundae*).



40. *Salvia phaenostemma* J. D. Smith (§ 35. *Sulcatae*).



41. *Salvia calocalicina* Briq. (§ 36. *Flexuosae*).



42. *Salvia cinnabarina* M. et G. (§ 37. *Incarnatae*).



43. *Salvia iodophylla* Epl. spec. nov. (§ 38. *Iodophyllae*).



44. *Salvia perlonga* Fern. (§ 39. *Chariantha*).



45. *Salvia Sanctae Luciae* Seem. (§ 40. *Membranaceae*).



46. *Salvia rubiginosa* Benth. (§ 40. *Membranaceae*).



47. *Salvia chamaedryoides* Cav. (§ 41. *Flocculosae*).



48. *Salvia Cavonii* Urb. (§ 42. *Tenuistachyae*).



49. *Salvia melissodora* Lag. (§ 43. *Scorodonia*).



50. *Salvia Urica* Epl. spec. nov. (§ 44. *Uricae*).



51. *Salvia cordata* Benth. (§ 45. *Rudes*).



52. *Salvia leptophylla* Benth. (§ 46. *Farinaceae*).



53. *Salvia rypara* Briq. (§ 47. *Malacophyllae*).



54. *Salvia decurrens* Epl. (§ 48. *Flavidae*).



55. *Salvia concolor* Lamb. (§ 49. *Dusenostachys*).



56. *Salvia Collinsii* J. D. Smith (§ 50. *Donnell-Smithia*).



57. *Salvia Pennellii* Epl. spec. nov. (§ 51. *Pennellia*).



58. *Salvia semiatrata* Zucc. (§ 52. *Atratae*).



59. *Salvia axilliflora* Epl. (§ 53. *Fendlera*).



60. *Salvia polystachya* Ort. (§ 54. *Polystachyae*).



61. *Salvia connivens* Epl. spec. nov. (§ 54. *Polystachyae*).



62. *Salvia saccifera* Urb. et Ekm. (§ 55. *Urbania*).



63. *Salvia simulans* Fern. (§ 56. *Carneae*).



64. *Salvia longimarginata* Briq. (§ 57. *Angulatae*).



65. *Salvia ampelophylla* Epl. (§ 58. *Ampelophyllae*).

Fedde, Rep. Beih. CX. Pl. XXXI.



66. *Salvia Maxonii* Epl. spec. nov. (§ 59. *Maxonia*).



67. *Salvia pansamalensis* J. D. Smith (§ 60. *Insignifolia*).



66. *Salvia Maxonii* Epl. spec. nov. (§ 59. *Maxonia*).



67. *Salvia pansamalensis* J. D. Smith (§ 60. *Insignifolia*).



68. *Salvia mexicana* L. var. *minor* Benth. (§ 61. *Briquetia*).